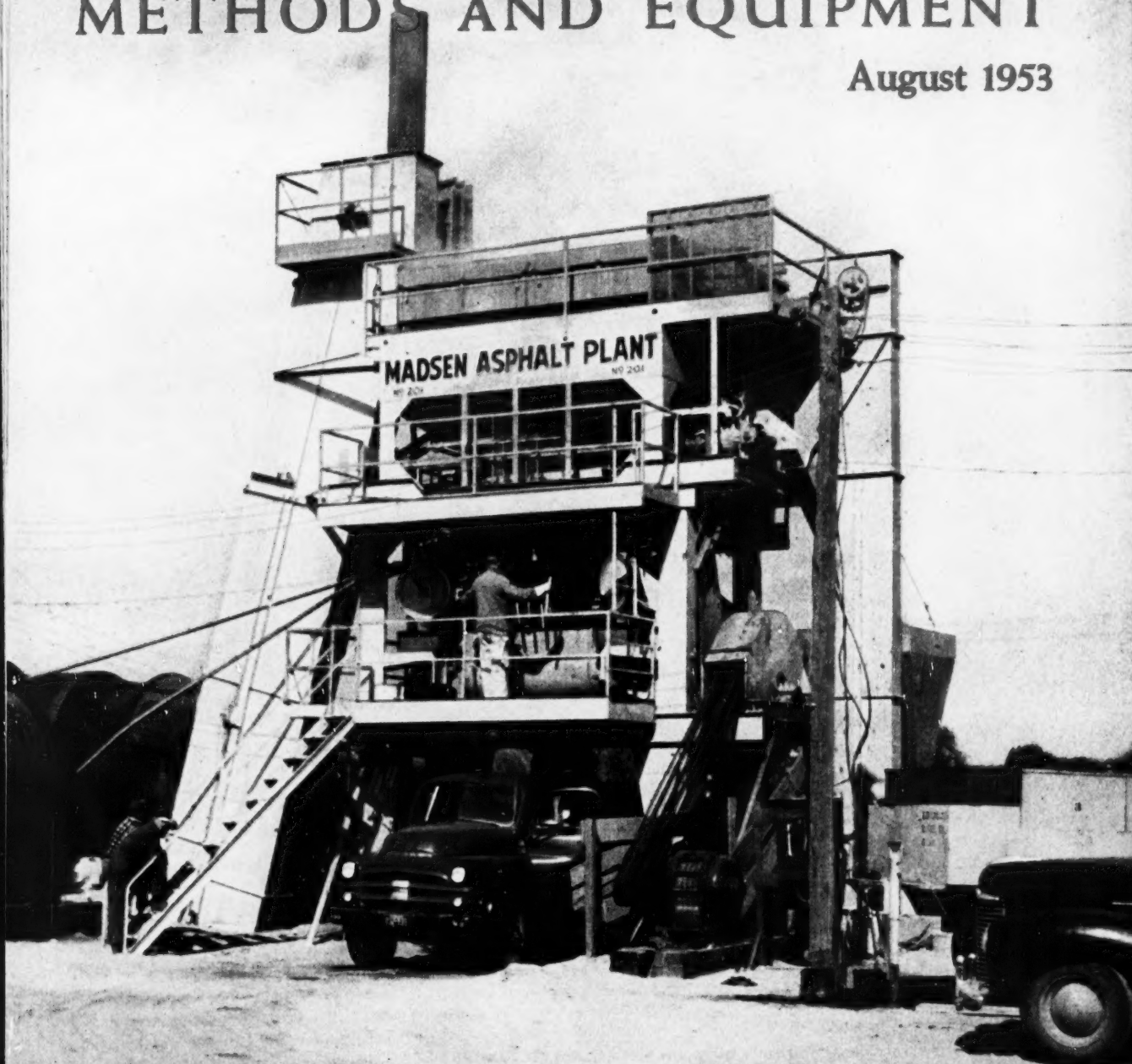


35 CENTS

# CONSTRUCTION

## METHODS AND EQUIPMENT

August 1953



A MCGRAW-HILL PUBLICATION



## GIVE YOUR EQUIPMENT THESE MONEY-MAKING ADVANTAGES:

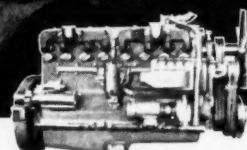


Install or specify Buda Dyna-Swirl Diesels in your scrapers, dozers, trucks and tractors and get the *competitive edge* these powerful, long-life engines can bring you. There's a Buda Diesel for every type of earthmoving and construction equipment. See your Buda Engine Distributor for complete details.

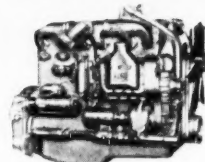
WRITE FOR BULLETIN 1526 • THE BUDA COMPANY, HARVEY, ILLINOIS

# BUDA

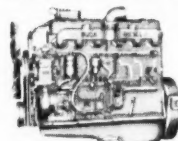
*a Power-Full and Dependable Engine  
FOR EVERY NEED*



8-DAS-1125 Supercharged  
350 HP at 2100 RPM



6-DAS-844 Supercharged  
280 HP at 2100 RPM



6-DA-779  
183 HP at 2080 RPM

## BUDA

COAST TO COAST

FACTORY EXPERIENCED  
SERVICE AND PARTS

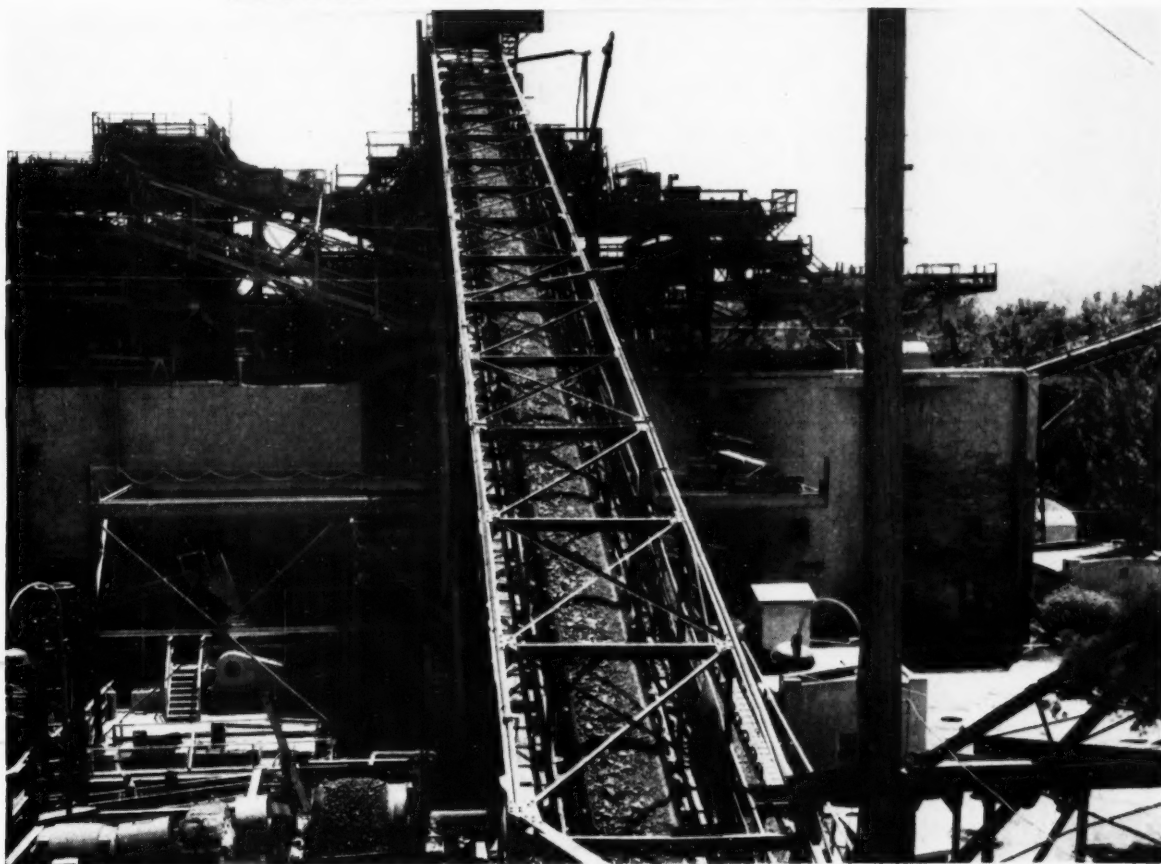
- S** 12 to 18% MORE HORSEPOWER at normal operating speeds . . . more reserve power for heaped loads
- S** 10 to 17% more useable torque . . . greater lugging ability . . . less shifting . . . faster round trips
- S** 6000 or more operating hours between overhauls . . . lower cost per hour of operation
- S** Exclusive Dyna-Swirl Combustion . . . more power per gallon of fuel . . . lower fuel cost
- S** Smooth, quiet operation . . . less exhaust fumes and smoke . . . less vibration . . . greater operator comfort and efficiency



RESEARCH KEEPS

**B.F. Goodrich**

FIRST IN RUBBER



## Wet, slippery gravel climbs uphill on steps of rubber

GETTING tons of gravel up that steep incline was causing plenty of trouble at this plant. A conveyor belt was used but the gravel is so wet it often slipped *down* faster than the moving belt could carry it *up*.

Then a B. F. Goodrich man told the company that BFG had developed a special belt, called Riffle Grip, to meet just such problems. Its cover has a series of extra-tough rubber steps, molded into the cover, which give the



belt its nonslip, gripping action. The patented Riffle Grip belt was tried at the gravel company, and as you see, it works perfectly.

Even at the high belt speed needed to move 1200 tons an hour, the rubber tread holds the gravel safely, surely. The water runs off to the sides. Yet just by changing the incline angle and adjusting the troughing idlers, this same BFG belt can haul such sloppy materials as wet mixed concrete and keep the water from draining away.

The B. F. Goodrich Riffle Grip belt is now at work in other gravel plants, on gold dredges, in concrete plants and other places where wet, sloppy materials must be carried up steep grades. It's making many mining and construction jobs cheaper, more efficient. To get further information on the unusual

Riffle Grip belt, simply send the coupon below, or call in your nearest BFG distributor.

*The B. F. Goodrich Company*  
Dept. M-72, Akron 18, Ohio

Without cost or obligation, please

☐ send me more information on the Riffle Grip belt.

☐ have a BFG distributor call on me.

Name

Company

Address

*Conveyor Belts* BY  
**B.F. Goodrich**



### Plenty of Power...

full 133 drawbar h.p. with the lugging power stepping up as the engine slows down under load ...power that keeps working on both tracks, even on turns.

## When you want...

### Easy Operation...

finger-tip air steering and over-center clutch bar that cut operator fatigue to the minimum... permit virtually "one-hand" operation of the tractor—no "footwork."

### Low Operating Costs...

no fuel wasting because power on both tracks means less power required on turns...balanced design eliminates cost of hauling unneeded "deadweight."

### Low Maintenance Costs...

Easy accessibility that means simpler, easier maintenance...power on both tracks at all times eliminates severe shocks and strains on gears... less loading on side frames.

*For complete information, see your Oliver Industrial Distributor or write for informative literature.*

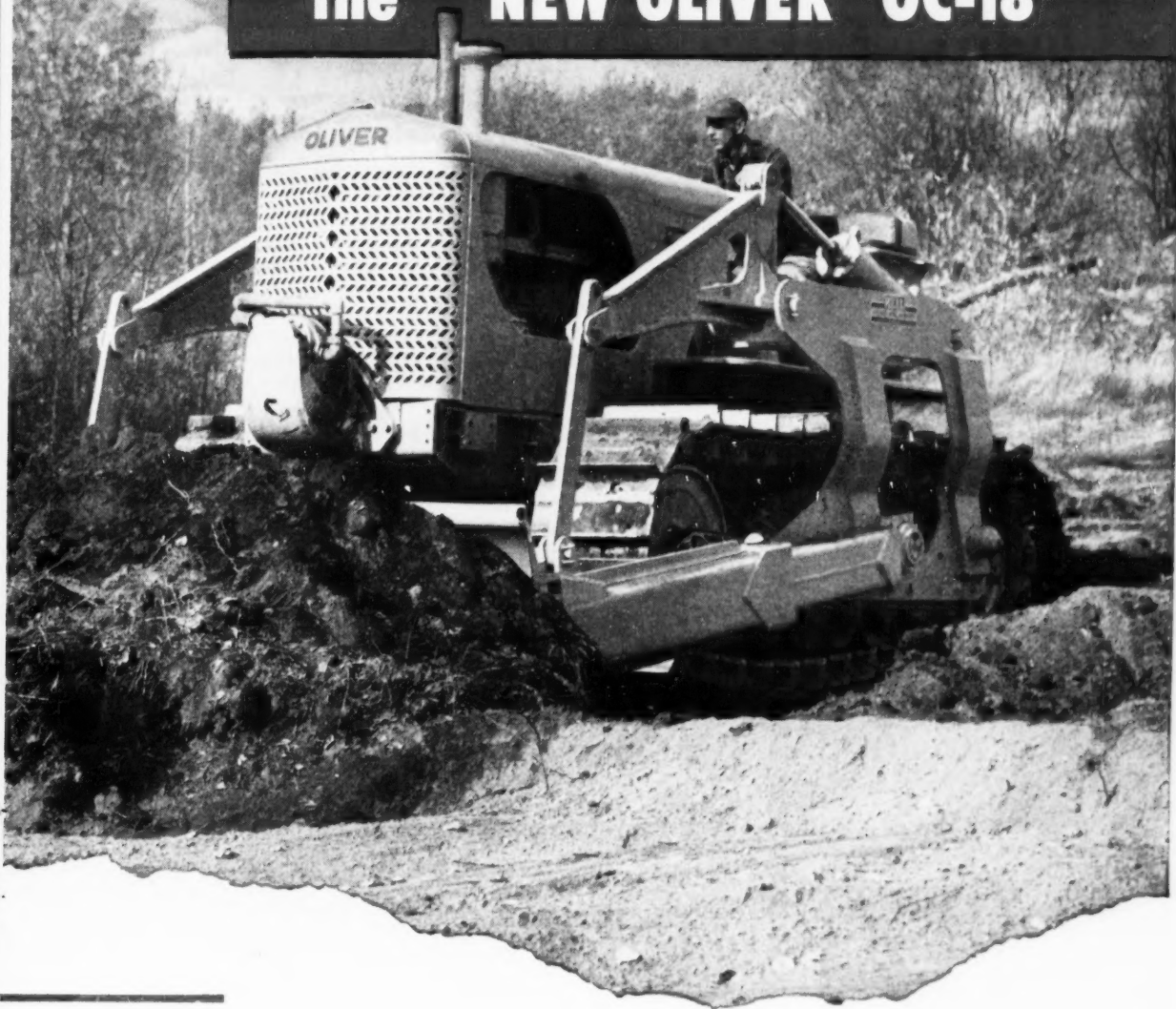
# THE OLIVER CORPORATION

400 W. Madison Street, Chicago 6, Illinois  
a complete line of industrial wheel and crawler tractors



**this is your tractor...**

**the NEW OLIVER "OC-18"**



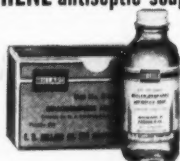


# NEW!

## Unit First Aid Packets

### HEXACHLOROPHENE antiseptic soap

Sterilizes as it cleanses. In a liquid form, it's an effective and economical surgical soap.



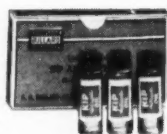
### Curad

Plastic medicated water-proof bandages that stick to the skin even when working with oil and gasoline. Extra thin to be worn under work gloves.



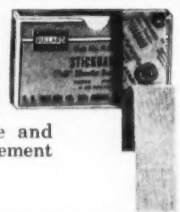
### KIP antiseptic oil

Soothing relief for burns, sunburn, non-poisonous insect bites and stings.

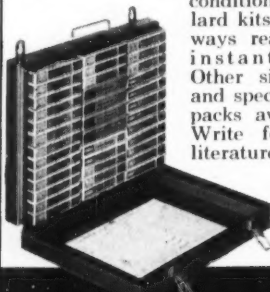


### Stickband

Small elastic bandages hold fast even on knuckles. Give and take with movement of the joint.



**FIRST AID KITS** Bullard safety-green Unit Packet first aid kits are weather-proof and dust-proof. Now in a new Hammertone finish with removable gaskets and spot-welded back hinges to prevent air leaks. Under the most rugged conditions Bullard kits are always ready for instant use. Other size kits and special unit packs available. Write for free literature.



## E. D. BULLARD CO.

275 Eighth Street,  
San Francisco, Calif.

Distributors in principal cities

EVERYTHING  
**BULLARD**  
IN SAFETY

# CONSTRUCTION

## METHODS AND EQUIPMENT

Volume 35, Number 8

**AUGUST 1953**

Established 1919

### Pay Dirt in This Issue

<b>Jet-Action Trencher Lowers Buried Submarine Pipeline</b> .....	50
Air and water jets cut Hudson River bottom so gas line, already in service, can sink 17 ft deeper	
<b>Four-Step Construction of Warehouses</b> .....	55
Site operations for 49 precast 50x200-ft buildings are: Batching, casting, handling, and final erection	
<b>Water Washes Fines From Fill to Make Impervious Dam Core</b> .....	62
As trucks dump pit-run dirt for up- and down-stream sides of Quebec dam, pumps sluice fines into center	
<b>LPG as Construction Machinery Fuel</b> .....	68
An expert tells what results you can expect from liquefied petroleum gas; compares it with diesel fuel	
<b>Job Talk</b> .....	12
<b>It's Your Business</b> .....	20
<b>Picture of the Month</b> .....	42
<b>Construction News in Pictures</b> .....	45
<b>Construction 'Round the World</b> .....	46
<b>Editorial</b> .....	49
<b>Air-Placed Concrete Makes Wall</b> .....	54
<b>Lightweight Joint Cuts Costs</b> .....	66
<b>Contractor-Labor Relations</b> .....	82
<b>Schild Bantams on Crawlers</b> .....	87
<b>Care of Flexible Hose</b> .....	97
<b>Waterstops Water at Pool</b> .....	101
<b>Job-Made Winches Lower Pipe</b> .....	105
<b>Barge-Mounted Pumps Drain Pit</b> .....	110
<b>How to Build a Rooding Axle</b> .....	114
<b>Concrete Saw Saves on Well Job</b> .....	118
<b>Sales and Service</b> .....	120
<b>Electric Wrench Speeds Work</b> .....	132
<b>Standardize Parts Books</b> .....	134
<b>Air Guns Place Sealer and Sand</b> .....	136
<b>Construction Equipment News</b> .....	140
<b>Methods Memo; On the Cover</b> .....	176

HAROLD W. RICHARDSON, Editor  
HENRY T. PEREZ, Senior Associate Editor  
IRA F. ANGSTADT, Managing Editor

Associate Editors:  
New York: Ralph H. Lewis • San Francisco: L. L. Wise •  
Washington: V. B. Smith

Assistant Editor: Nelle Fitzgerald, Layout  
Assistant: Audrey Thornton • Editorial Secretary: Gloria Hussey

Business News: Elsie Eaves, Manager

Domestic News Bureaus: Atlanta • Cleveland • Detroit • Houston • San Francisco • Washington — Foreign News Bureaus: London • Frankfurt • Paris Tokyo • Mexico City • Manila • Sao Paulo

R. F. BOGER, Publisher

August 1953 CONSTRUCTION METHODS AND EQUIPMENT Vol. 35—No. 8

Member ABC and ABP

Published monthly by McGraw-Hill Publishing Co., Inc., James H. McGraw (1860-1948) Founder.

Executive and Advertising offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Construction Methods and Equipment—Subscription Service, 330 W. 42nd St., New York 36, N. Y. Allow ten days for change of address. Subscriptions are solicited only from persons engaged in construction or in supplying the construction industry. Position and company connection must be indicated on subscription orders.

Single copies 35c. Subscription rates—United States and possessions \$3.00 a year; \$4.00 for two years; \$5.00 for three years. Canada \$4.00 a year; \$6.00 for two years; \$8.00 for three years. Other Western Hemisphere \$10.00 a year; \$16.00 for two years; \$20.00 for three years. All other countries \$15.00 a year; \$25.00 for two years; \$30.00 for three years. Re-entered as second-class matter July 14, 1949, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1953 by McGraw-Hill Publishing Co., Inc. — All Rights Reserved



## 169,000 Sq. Ft. of Precast 'Incor' Concrete Wall Panels in New Grumman Aircraft Plant

● A sixth Grumman Aircraft plant is being built on a 4700-acre site, on eastern Long Island. The accent is on speed with economy, through the use of 169,000 sq. ft. of precast insulated wall panels, in a complete wall system which is fire-safe, durable, weather-resistant—2500 sq. ft. erected per 7-hour day, with one crane and crew—6 sq. ft. a minute!

Cost is less than usual masonry construction. Size and texture of units give architectural effect and appearance considered by many as superior to high quality cut-stone. Highly-mechanized casting operation gets utmost production speed by using 'INCOR'® 24-HOUR CEMENT. Panels are lifted 18 to 24 hours after casting, placed in curing room for 2 days, then stored in yard. Dependable 'Incor' high early strength assures clock-like schedules.

Another demonstration of assembly-line methods applied to construction—a potential of great significance in the light of today's building costs.

\*Reg. U.S. Pat. Off.

GRUMMAN AIRCRAFT ENGINEERING CORPORATION  
Peconic River Plant, Calverton, L.I.

Supervision: DEPT. OF THE NAVY, BUREAU OF YARDS AND DOCKS

Architects-Engineers:

OFFICE OF ALFRED EASTON POOR • SEELYE, STEVENSON, VALUE & KNECHT

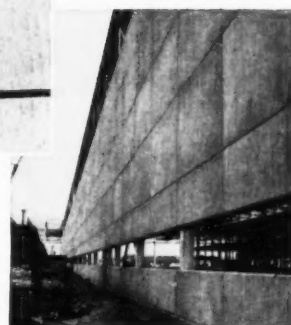
General Contractors:

GROVE-SHEPHERD-WILSON & KRUGE, INC. • HENDRICKSON BROS., INC.

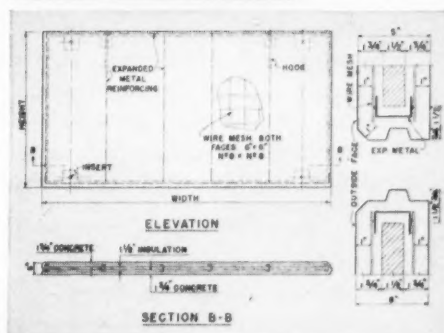
Precast Concrete Wall Panels:

PRECAST BUILDING SECTIONS, INC., New Hyde Park, L.I.

in association with: MARIETTA CONCRETE CORPORATION, Marietta, Ohio



Size, texture and quality of panels produces appearance considered by many as superior to high-quality cut-stone—cost is less than usual masonry construction. Above, wall of main building, left, power plant. Panel detail, below.



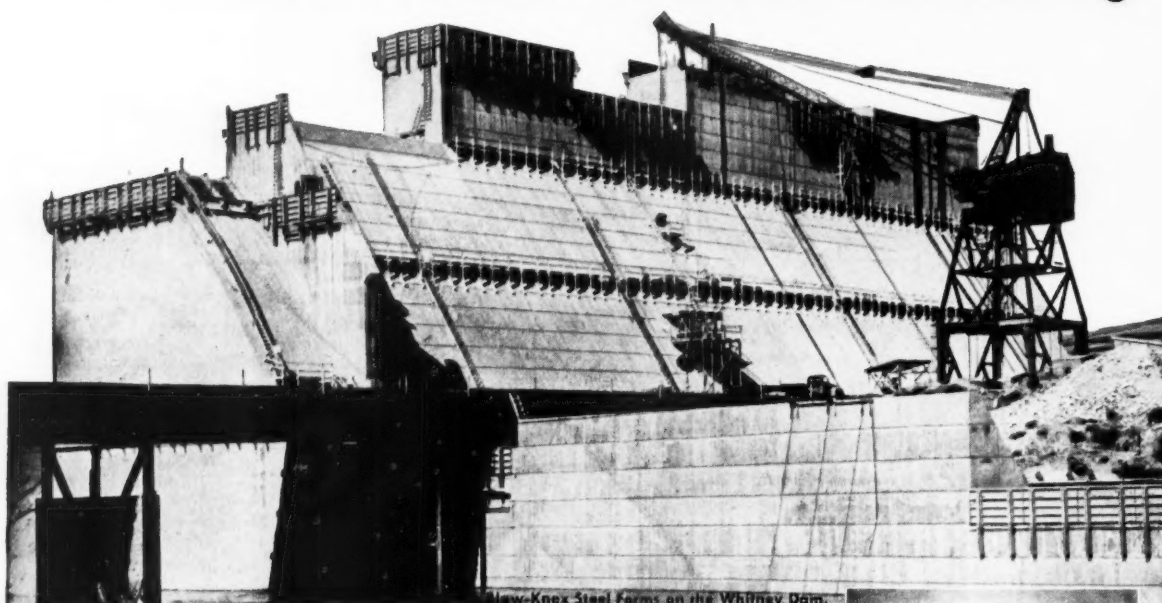
LONE STAR CEMENTS COVER  
THE ENTIRE CONSTRUCTION FIELD

## LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N. Y. • BETHLEHEM, PA. • BIRMINGHAM  
BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS  
KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK  
PHILADELPHIA • RICHMOND • ST. LOUIS • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 18 MODERN MILLS, 129,000,000 SACKS ANNUAL CAPACITY

# Is Your Concreting Job Large — Small — Unusual — Complex ?



Blaw-Knox Steel Forms on the Whitney Dam.

## BLAW-KNOX STEEL FORMS

plus BLAW-KNOX CONSULTATION SERVICE  
will save you money!

WHATEVER your concreting problems—dams, tunnels, bridges or concrete installations of any kind—take advantage of Blaw-Knox Consultation Service *for preliminary planning*. It will save you time and money, as it has on so many jobs all over the world.

Blaw-Knox engineers, backed by over 40 years' experience in solving tough and unusual concreting problems, are trained to simplify forming methods. They get to the heart of your problem *before the final plans are drawn*—then recommend the exactly right forms for the job, and suggest simplified operating procedures that cut costs by eliminating unnecessary operations.

On your next engineered construction job, consult Blaw-Knox *first*, for recommendations and estimates before submitting your bids. There's no obligation for the expert Blaw-Knox Consultation Service that assures faster, less expensive concrete placing. Write, wire or phone for information.



SPECIAL TRAVELING STEEL FORMS were used to speed a tough tunnelling problem in treacherous rock. In a 7200-ft. railroad relocation bore, a reinforced concrete lining was placed at a rate of 150-ft. a week. It required only 6 to 8 hours to move the retractable steel forms. This is a typical example of Blaw-Knox forms designed to meet unusual conditions.

### WRITE FOR BULLETIN 2035

Get complete details about Blaw-Knox Steel Forms and the consultation service that is available to any contractor without obligation.



**STEEL  
FORMS**



### CONSULTATION SERVICE BY BLAW-KNOX COMPANY

Blaw-Knox Equipment Division

2086 Farmers Building, Pittsburgh 22, Pa.

New York • Chicago • Philadelphia • Birmingham • Washington • San Francisco



**THIS LIST  
ISN'T  
COMPLETE  
WITHOUT  
YOU**

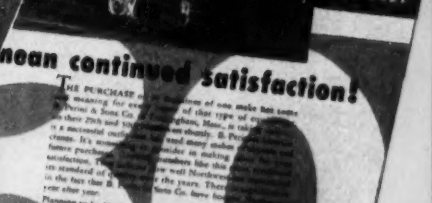


**REPEAT ORDERS  
and OUTPUT  
Go Together!**

Repeat orders are an endorsement of respect when you are talking about cranes and shovels. Chances are, having equipment on hand - they want to know they can get it when they need it. They found the machine they could count on to stand up to the toughest Northwest jobs.

Now you can depend on Northwest for portlands, and for the Northwest Crane.

**NORTHWEST ENGINEERING COMPANY**  
1000 First Avenue, Suite 1000, Seattle, Wash. 98101



**mean continued satisfaction!**

THE PURCHASE of a machine of new make has long been a matter of great importance to the owner. It is a machine that will stand up to the toughest Northwest jobs. It is a machine that will stand up to the toughest Northwest jobs. It is a machine that will stand up to the toughest Northwest jobs.

**NORTHWEST**  
SHOVELS • CRANES • DRAGLINES • PULLSHOVELS



**YOUR FIRST NORTHWEST WILL BE OUR BEST SALESMAN**

**NORTHWEST**

**SHOVELS • CRANES • DRAGLINES • PULLSHOVELS**



# B.F. Goodrich



## Universal tires roll over jagged slag, can still be recapped!

**T**HIS truck, part of the fleet of the McGraw Construction Company of Middletown, Ohio, dumps 55,000 pounds of slag fill for a new highway. The following truck must roll over this slag, often jagged and sharp-edged as broken glass. Many tires would be torn and cut to pieces after such rugged treatment.

But McGraw uses B. F. Goodrich Universal tires—tires that take such rough work so well, the company reports, they can actually be recapped! The Universal tread is specially compounded to resist rock cuts and bruises. Husky, wedge-shaped cleats defy snags, give positive traction in either direction.

And Universal tires are built with

the patented B. F. Goodrich nylon shock shield. Layers of strong, elastic nylon cords under the tread stretch together to protect the cord body from tire-killing cuts and bruises. Result: Universal tires give you more hours of service, more recappable tires and hours of service per recap, increased bruise resistance and less danger of tread separation. You pay no more for the advantages of the exclusive nylon shock shield.

No wonder Paul J. Thiel of the McGraw Purchasing Department says: "We use B. F. Goodrich tires 100%." There's a B. F. Goodrich tire that saves money on all types of off-the-road work. See the complete line at your

retailer's store. The address is listed under Tires in the Yellow Pages of your phone book. Or mail the coupon below.



*The B. F. Goodrich Company  
Department TO-132, Akron 18, Ohio*

Please send:

- ☐ Catalog on Universal tires
- ☐ Free booklet, "How to get more recaps out of truck tires"
- ☐ Name of my nearest retailer

Name \_\_\_\_\_

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

**Specify B. F. Goodrich tires when ordering new equipment**



**FAST AND CLEAN DISCHARGE** of even the lowest slump concretes is made possible by the patented blade design of this Worthington Hi-Up Truck Mixer, one of a fleet owned by the McNamee Ready Mixed Concrete Co. of Xenia, Ohio.

## "Drivers, shop men, customers—everybody likes our new Worthington Truck Mixers"

Says Charles F. McNamee of the McNamee Ready Mixed Concrete Co., Xenia, Ohio



**McNAMEE DRIVERS LIKE THE HI-UP** because its unrestricted hopper opening keeps charging time to a minimum. Both charging and mixing are accomplished with the drum rotating in the same direction. And the engineered weight distribution of the Hi-Ups lets you carry the maximum legal payload.

Mr. McNamee goes on to say:

"We particularly like our new Blue Brutes' heavy-duty transmission and their ease of operation. Our shop men like the provisions for easy maintenance; for example, they point out the relatively few lubrication points and their ready accessibility. The drivers say the machines are unusually easy to handle and to keep clean, that they mix and discharge exceptionally well. But what makes us happiest of all is that the machines and their product are liked by our customers."

We've been getting letters like this from Worthington Hi-Up Truck Mixer users all over the country. Why not find out for yourself about these modern Blue Brutes. Get the facts from your nearest Worthington distributor, or write directly to Worthington Corporation, Construction Equipment Division, Section R.3.6, Plainfield, N. J.

R.3.6

# WORTHINGTON



IF IT'S A CONSTRUCTION JOB, IT'S A **BLUE BRUTE** JOB!

V-BELTS • QD SHEAVES • AIR COMPRESSORS • CENTRAL MIXERS • VERTICAL TURBINE PUMPS • CIRCULATING PUMPS



## **ALLIS-CHALMERS MOTOR SCRAPERS**

# **FULL CONTROL makes**

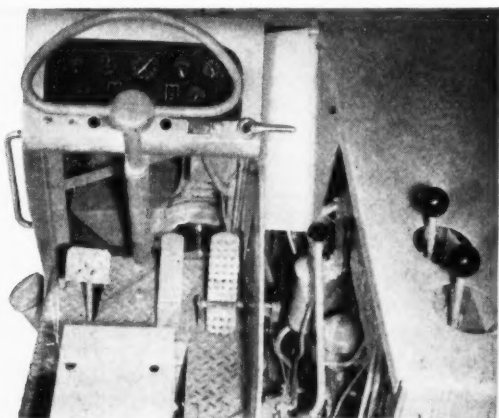


### **TS-300 IN ACTION**

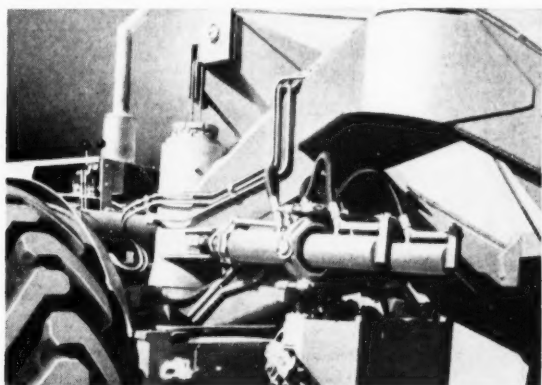
14 cu. yd. struck capacity  
18 cu. yd. heaped capacity  
280 hp. Buda diesel or  
275 hp. Cummins diesel

## the difference

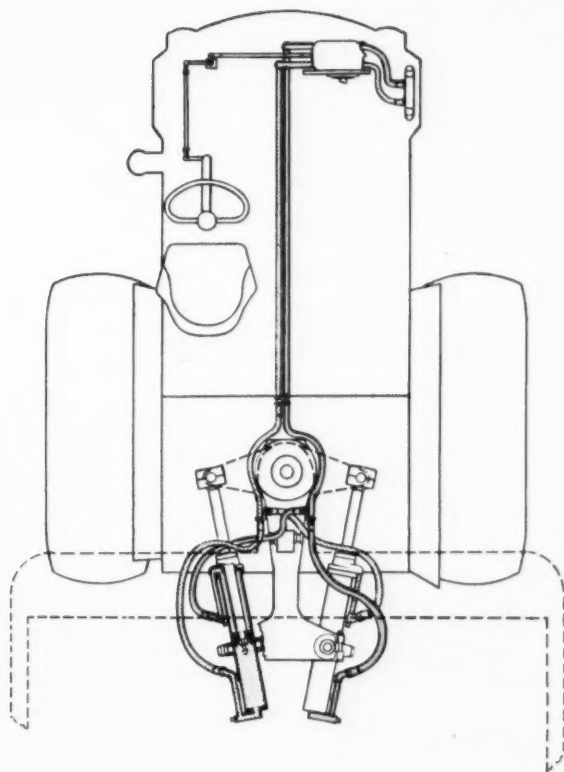
The full control built into Allis-Chalmers *Motor Scrapers* offers you a real advantage. There's no tiring wheel fight for the operator . . . no straining to see what he's doing. What's more, full control creates greater confidence when he's high-balling a full load. He can work at his best all day long easily and safely. To you owners, that means moving *more dirt faster, more profitably.*



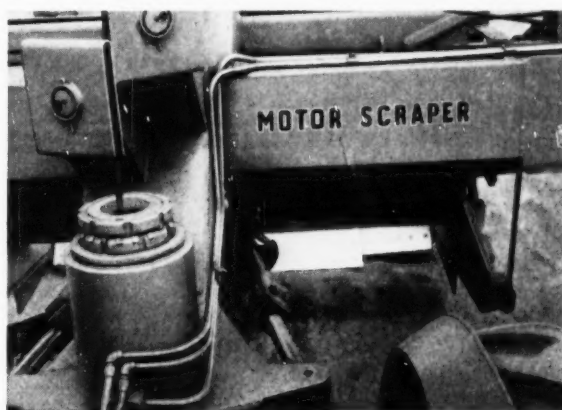
**One Hand Does the Steering**—the other handles the scraper controls. Fast action makes loading easy. The operator can utilize hydraulic power of steering jacks to pull through soft spots in haulways under extreme conditions.



**No Weaving—No Road Shock** — Hydraulic system is locked and the *Motor Scraper* becomes a rigid 4-wheel unit except when steering wheel is turned, thus eliminating transmission of road shock to steering wheel. Low-mounted rams, close to load line pull, mean minimum stress on the kingpin.



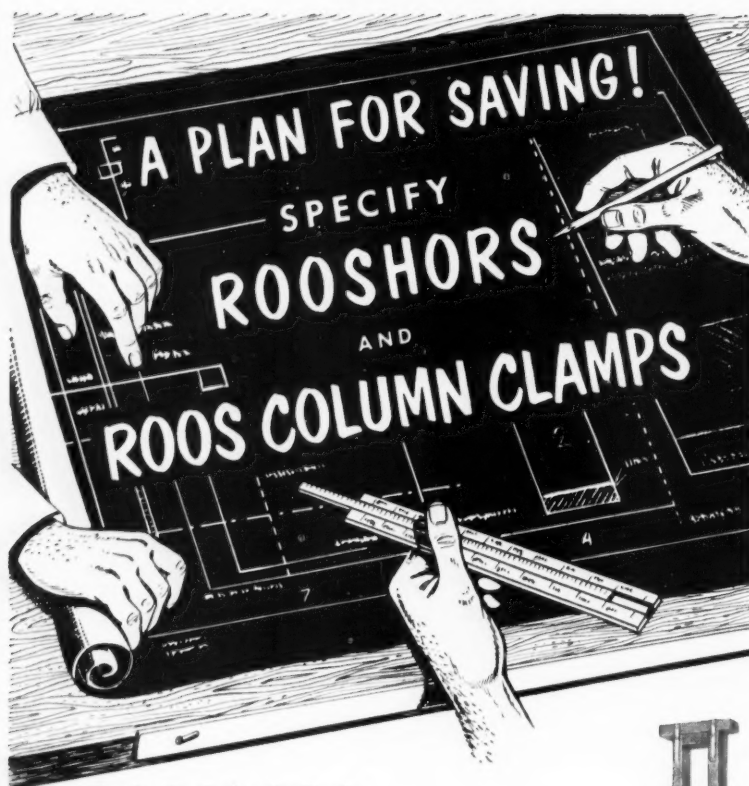
**Easy, Fast-Action Steering** — Schematic layout shows simple double-action steering system. Slightest movement of wheel opens valve of gear-type pump; release wheel and valve automatically returns to "hold." Only a one-third turn of steering wheel is necessary for a full swing of the tractor.



**Excellent Operator Visibility** — Clean design of low gooseneck connection gives operator unequalled view of cutting edge, helps him cut cleanly, efficiently . . . load fast and full.

Your nearby Allis-Chalmers dealer will be glad to show you and give you the full story on these job-proved *Motor Scrapers*. See them at work.

**ALLIS-CHALMERS**  
TRACTOR DIVISION — MILWAUKEE 2, U. S. A.



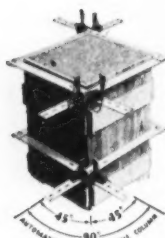
## ROOSHORS...

Rooshors save because they can be set faster, cause no delays and may be used over and over, from floor to floor and from job to job. They are instantly adjustable to "hairline" accuracy and have no pins or screw adjustments to cause needless delays. Wooden upper members permit easy fastening of lateral or diagonal bracing. Sizes: 8 ft. to 14 ft.; 7 ft. to 13 ft.; and, 5 ft. to 9 ft.; higher stories are shored with ROOS EXTENSION SHORES...



flat steel head on standard adjustable Rooshor into which any length S4S 4 x 4 may be inserted. Provides adjustability with extension.

Rooshors Have Been Used By Contractors from Coast-to-Coast Over 35 Years.

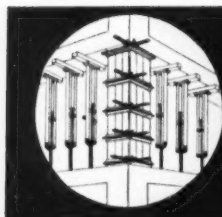


### ROOS COLUMN CLAMPS . . .

Roos Column Clamps, consisting of two identical hinged units, save by eliminating waste time and motion in fitting and adjusting. They are foolproof, there is no wrong way to put them on . . . no loose parts to cause needless delays, and a hammer is the only tool needed.

Write today for Bulletin 253

Rooshors and Roos Column Clamps are available for rental with purchase option from warehouse stocks in principal cities.



## BAKER-ROOS, INC.

602 W. McCARTY STREET  
INDIANAPOLIS 6, INDIANA

## ★ JOB TALK ★

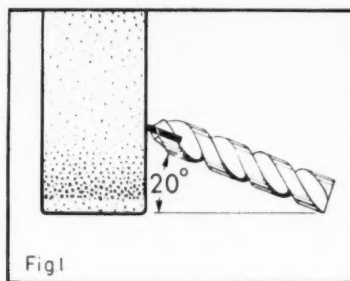
### ... About Methods

#### How to Sharpen Carbide-Tipped Drills

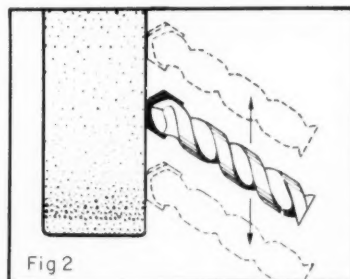
A FOUR-STEP PROCEDURE for sharpening carbide-tipped masonry drills is outlined by the Carbide Department of General Electric Co.

The first recommendation is the use of a silicon carbide grinding wheel. Drills should be sharpened when a flat develops on the cutting edge of 1/64 in. or more and the drill restored to its original 118-deg included angle.

Here are the four steps:



1. Bring the drill against the side of the grinding wheel at a 20-deg angle as shown in Fig. 1. This 20-deg angle must be maintained or the drill will not cut properly.



2. Using moderate pressure, move the drill back and forth across the wheel to avoid overheating (Fig. 2). (If overheating should occur, do not drop the drill into liquids to cool.)

3. Keep the two cutting edges of the drill of equal length while sharpening (Fig. 3, page 18). If the edges vary in size, the drill will make oversized cuts.

4. Repeated resharpening of the drill will reduce the clearance be-  
(Continued on page 18)



# How big is a scraper payload?



► Because there are several ways to figure equipment capacity, it's mighty important that payload ratings are compared on the same basis. For example, if you use the struck figure for one unit and the heaped capacity for others in making a production estimate, the result can mean an unprofitable bid and higher costs per yard moved.

And heaped capacity ratings can be misleading too, because just how high is a heap? Some manufacturers use a heaped figure based on a 1:1 slope while others prefer a more conservative and practical rating of 3:1 slope. Heaped loads can vary by several cubic yards depending on the material, method of loading and hauling conditions. For example, the Euclid Scraper carries 15.5 cu. yds. with a level load, 18 cu. yds. with load heaped to 3:1 slope and 21 cu. yds. at 1:1 slope.

When you're in the market for scrapers to supplement or replace your present equipment, be sure to check struck capacity and other specifications such as engine horsepower, loaded travel speed, scraper operating controls and hourly cost and production data.

How big is a scraper payload? You can't tell how much dirt is in the bowl just by looking—it's the pounds of pay dirt that tell the story. By actual scale weight, "Eucs" carry more pounds of payload than scrapers of comparable size because the design of the low, wide bowl provides good loading action and exceptional compaction.

You'll find there are good reasons why "Euc" scrapers outperform all others of comparable size. A Euclid distributor near you will be glad to supply all the facts—without any obligation, of course.

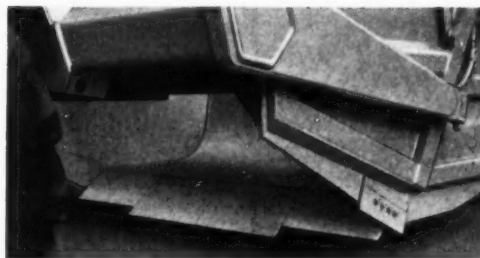
**The EUCLID ROAD MACHINERY Co., Cleveland 17, Ohio**

CABLE ADDRESS: YUKLID

CODE: BENTLEY



**LEVER ACTION** is an exclusive Euclid development that eliminates all but 13 ft. of cable . . . no more cable replacement expense or down time due to cable breakage. All four hydraulic hoists that operate bowl, apron and ejector are interchangeable.



**CUTTING BLADE** consists of 4 sections, each interchangeable and reversible. This Euclid design permits easy adjustment to provide blade arrangements that are most efficient for loading any type of material from loose sand and top soil to heavy clay and shale.



## Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE



**"OUR MAINTENANCE  
COSTS ARE LOW  
with TEXACO MARFAK"**



**—says New Mexico contractor (name on request)**

TEN YEARS on-the-job experience with the world's most famous chassis lubricant brings forth this comment from a leading contractor:

*"Texaco Marfak stays in the bearings, gives longer lasting protection against wear and rust even under the toughest conditions, and definitely increases parts life."*

Everywhere, contractors look to *Texaco Marfak* for better lubrication at lower cost.

In wheel bearings, use *Texaco Marfak Heavy Duty* for the same longer lasting protection. It seals out dirt and moisture, seals itself in — assuring safer braking. Bearings last longer, maintenance costs come down. No seasonal change required.

**MORE THAN 500 MILLION POUNDS  
OF TEXACO MARFAK HAVE BEEN SOLD!**

In engines, use *Texaco Usra Oil X\*\**. It's fully detergent and dispersive . . . keeps heavy duty gaso-



**TEXACO**



line and Diesel engines clean . . . reduces maintenance costs and fuel consumption.

In crawler track mechanisms, use *Texaco Track Roll Lubricant*. It's especially designed to seal out dirt and moisture, guard your bearings against wear and rust.

A Texaco Lubrication Engineer will gladly help you keep your equipment at peak efficiency. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

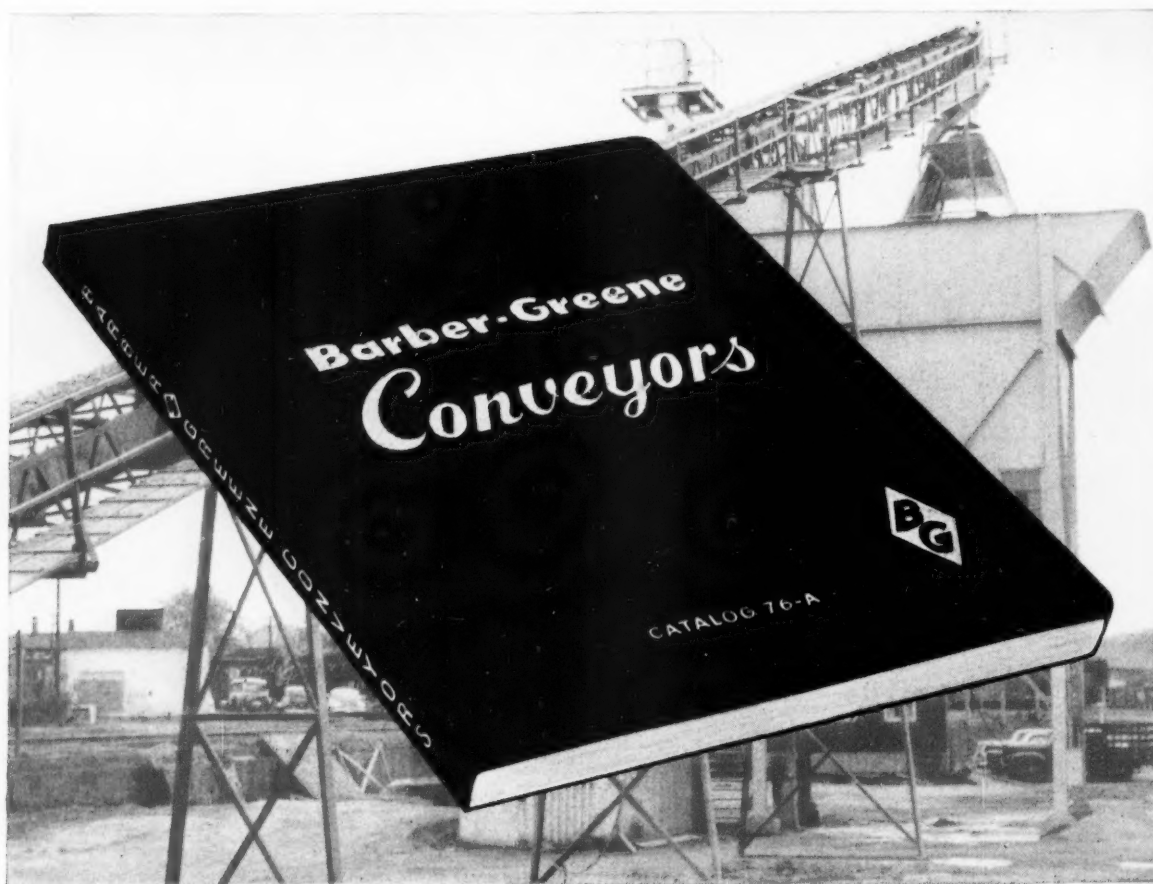
### **Simplify your lubrication**

—Do as contractors everywhere are doing — follow the Texaco Simplified Lubrication Plan. With it, you need only six Texaco Lubricants to handle all your major lubrication. A great time-, trouble-, and cost-saver. See your Texaco Lubrication Engineer for full details.

# **Lubricants and Fuels**

**FOR ALL CONTRACTORS' EQUIPMENT**





## If You Handle Bulk Materials You Will Want This New Catalog!

**Here's the Most Complete, Comprehensive,  
Easy-to-Use Conveyor Catalog Ever Published!**

Clearly presented in this 192-page book is the broad selection of standardized drives, take-ups, truss, idlers, belting . . . all the components and accessories required to fit your requirements. There are more than 60 pages of typical conveyor layouts and installation photographs. Also included is a section on shuttle conveyors, stackers, feeders and portables.

This catalog clearly and factually demonstrates the savings in design, delivery time, erection and operating costs that Barber-Greene standardization makes possible. Once you use it, you'll have a new conception of the economy, utility and simplicity of Barber-Greene Standardized Conveyors.



### **WRITE FOR YOUR COPY**

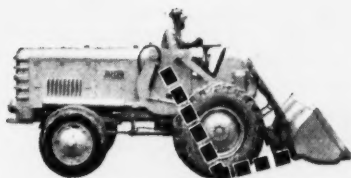
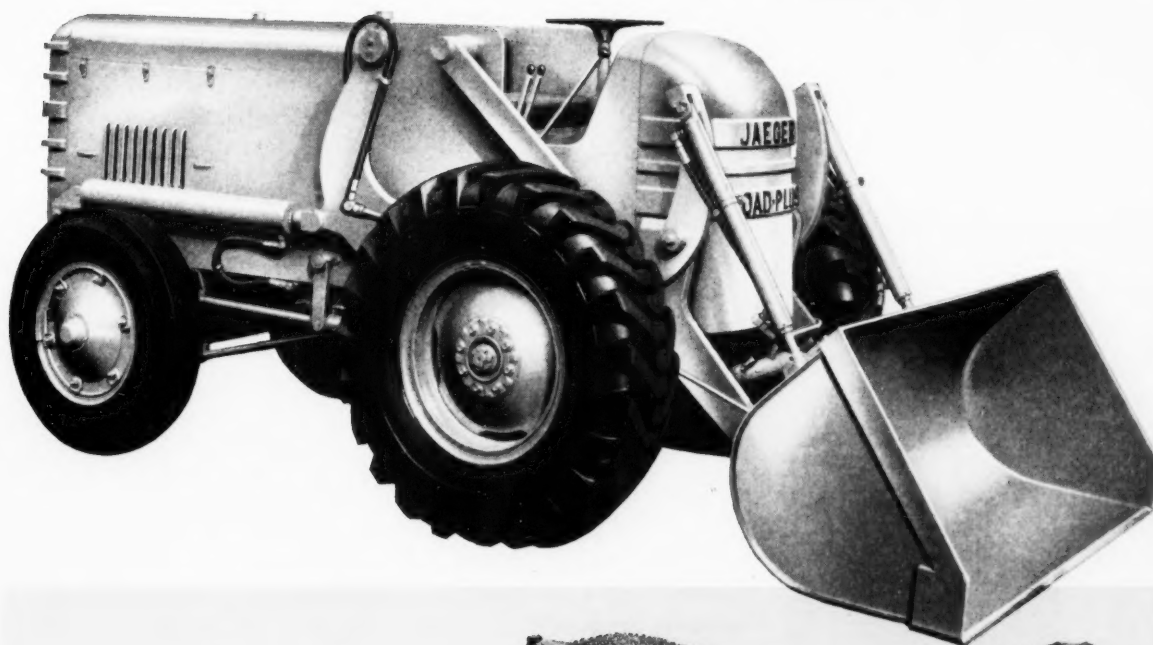
If you handle bulk materials,  
you'll want this new catalog.  
Please request Catalog 76-A  
on your company letterhead.

53-20A-PE

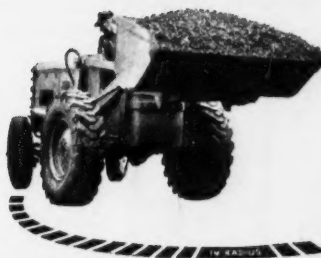
# Barber-Greene

Aurora, Illinois, U. S. A.





All weight centers on driven front wheels for maximum traction. Torque converter automatically applies power needed to meet the load.



Power-steered rear axle turns unit in 14' radius. 5 speeds to 28.2 mph reverse, 18.7 forward.



Has 24" reach at 8' 2" dumping clearance; booms and bucket under finger-tip control.

**Jaeger "load-plus"** Designed to the performance specifications of hundreds of America's crack operators, this faster, more stable, more maneuverable loader easily outproduces any other loader in the field.

Now available in 1 cu. yd. size with torque converter, front-wheel drive, rear axle power steering and instant directional shift. Also in 12 cu. ft. car-unloader model. For complete information, send today for Catalog L100-3.

## THE JAEGER MACHINE COMPANY

800 Dublin Avenue, Columbus 16, Ohio

AIR COMPRESSORS • PUMPS • MIXERS • TRUCK MIXERS • PAVING MACHINERY

# Owens

## ... are FAMOUS for "FIRSTS"

... First choice of the clamshells amongst progressive contractors and operators who "dig for" profits, large or small, all over the world.

**An OWEN BUCKET takes the "first" bite-  
into the earth. Starting the new \$5,000,000  
E. 55th Street Interchange with Shore Drive.  
Cleveland, Ohio**



*"A mouthful  
at every bite"*

**THE OWEN BUCKET CO.**

Cable Address  
"OWENCO"

6020 Breakwater Avenue • Cleveland, Ohio

Branches: New York, Philadelphia, Chicago, Berkeley, Calif., Fort Lauderdale, Fla.

JOB TALK . . . Continued from page 12

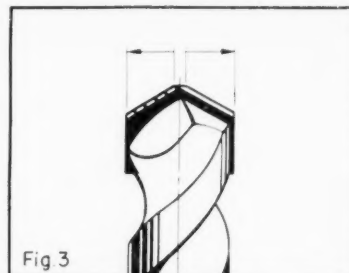


Fig 3

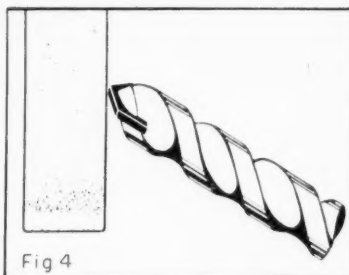


Fig 4

tween the carbide tip and the steel shank. When necessary, grind away steel from behind the carbide tip so the steel is no where closer than 1/32 in. to the working surface of the carbide blank (Fig. 4).

### Check Preparations Before You Pour

Last minute checks are invaluable on any operation. When pouring concrete they are doubly important because an error or omission of specified inserts usually leads to long and hard labor to make repairs after the material has set. Irvington Form & Tank Corp. issues a handy check list on a card that can be hung up on the job. It is called the Atlas Concrete Checker, lists the following 10 points:

1. Is concrete ordered for delivery at right time?
2. Sufficient forms, ties, form oil and other accessories of right size on the job?
3. Is wall set to proper line at the top of pour as checked from batter boards?
4. Are grade nails placed to the proper elevation?
5. Does wall require brick or stone recesses, and are they checked for proper elevation?
6. Does wall require openings for vents, windows or doors?

(Continued on page 29)



Weston Power Plant, Rothschild, Wis.—Engineers: Pioneer  
Service & Engineering Co., Chicago, Ill.—Owner:  
Wisconsin Public Service Corporation, Milwaukee, Wis.



**WELLPOINTS  
ELIMINATE  
SHEETING...**

## *...on power plant foundation*

Construction costs took a nose dive when the engineers on the Weston Power Plant constructed an earth-fill cofferdam and predrained the wet excavation with a Moretrench Wellpoint System.

Confidence in the efficiency of Moretrench Equipment enabled the pumping contractor, American Dewatering Corporation, New York, to guarantee results in a limited period of time.

Three days after pumping started, 16' of water had disappeared and they were excavating "in the dry" at a considerable saving of time and money. During flood stage of the river, 25' of water were handled perfectly.

For results like this on your wet work, call our nearest office!

## **MORETRENCH CORPORATION**

90 West St.  
New York 6

4900 S. Austin Ave.  
Chicago 38, Illinois

7701 Interbay Blvd.  
Tampa 9, Florida

315 W. 25th St.  
Houston 8, Texas

Rockaway  
New Jersey

# It's Your Business . . .

## Mid-Year Round-Up Shows . . .

More private and local public money, more new equipment, new wage pattern begins to line up, prices continue up.

**New money:** Corporate security sales to finance private construction total \$2.5 billion through mid-July, up 8% from last year. In the same 29 weeks state and municipal bond sales to finance public work, also \$2.51 billion, are 26% higher than last year. These will finance schools and other buildings in addition to water, sewerage and all other local works except housing. Housing notes have produced \$211 million, 16% more than last year. New federal appropriations are still in the talk stage as this page goes to press but should crystalize soon, somewhat lower than last year.

**New equipment:** Shipments of new earthmoving equipment increased 20% in the first quarter this year over the average for the second half of last year, but ran 3½% below the first quarter a year ago. Power shovels and cranes are up 5% over last year's first quarter to \$54 million, track-laying tractors are up 8% to almost \$85 million, and dozers and other tractor attachments are up 23% to \$21 million. Running behind last year are road machinery, down 23% to \$35 million and wheel tractors, down 38% to \$11 million.

Heavy equipment sales in 1952 show—for wheel tractors a 50% increase over 1951, for crawler tractors a 17% increase in machines over 50 hp, and for units under 50 hp a 29% increase. Power shovel sales show increases in larger sizes, a drop in ¾-yd units.

**New wage pattern:** From 10 to 15c an hour is the wage increase range for 63% of the new labor contracts so far signed by 79 construction unions in 20 cities. The average increase for common labor is 11.3c for the 11 cities reporting through June. These range from 7c in Atlanta to 25c plus fringe benefits in New York.

For the skilled trades, bricklayer agreements from 9 cities average out at a 10.6c increase. Carpenters average 14.6c and structural iron workers, 15.3c with returns in from 12 cities. Structural iron workers in Pittsburgh get the top increase to date, 35c, but in New York fifteen building trades are asking 40c plus 20c in fringes.

**Prices:** Construction costs are up 5 to 6% in the last year. Contributing to this are common wages, up 7%; skilled wages, up 6%; structural steel, up 12%; cement, up 4%; structural clay tile, up 4.9%; ready-mixed concrete, up 3.4%; sand, up 3.3%. Only lumber is holding or is down. Fir prices, 4.2% lower, pine only 0.5% higher than a year ago. Plywood, on the other hand, is up 6.3% as of June. Construction equipment prices are up 3.3%; topped by tractors which are priced 6.1% higher than a year ago.

All evidence from bid openings indicates that contractors are continuing to reduce their prices in the face of these higher costs. One of the grimmest bits of evidence is another rise in contractor failures in June.

The morals here are: Watch your bidding, keep a tight rein on job management and don't milk your equipment replacement reserve. You'll have to replace at higher prices.

## SOME BIG CONTRACT AWARDS OF THE MONTH

**List & Clark Const. Co.,** Railway Exchange Bldg., Kansas City, Mo. Fort Randall Reservoir project, Lake Andes, S. D. for U. S. Engineers, 1709 Jackson St., Omaha, Neb., \$5,114,399.

**Pittsburgh-Des Moines Steel Co.,** Neville Island, Pittsburgh, Pa. 2,000-ft span superstructure Fleming Park Bridge and approaches, Stowe Township, Pittsburgh, for Board of Commissioners Allegheny Co., Pittsburgh, \$1,139,129.

**Koppers Co., Inc.,** Koppers Bldg., Pittsburgh, Pa. Design and construction 79 chemical recovery coke ovens at Hazelwood plant, Pittsburgh, for Jones & Laughlin Steel Corp., 3rd & Ross Sts., Pittsburgh, \$10,000,000.

**Judson Pacific-Murphy Corp.,** 4300 East Shore Highway, Emeryville, Calif., bottom lateral bracing for Golden Gate bridge, San Francisco, for Golden Gate & Highway District, Box 99, Presidio Station, San Francisco, \$3,062,216.

**Winston Bros Co.,** Northwest Bank Bldg., Minneapolis, Minn.; **McLaughlin Inc.,** Ford Bldg., Great Falls, Mont.; **F. & S. Contracting Co.,** 1300 Chicago St., Butte, Mont.; **Johnson, Drake & Piper Co., Inc.,** Baker Bldg., Minneapolis, Minn.; **Donavan Const. Co.,** 1725 Carroll Ave., St. Paul, Minn.; **C. F. Lytle Co.,** 250 Insurance Exchange Bldg., Sioux City, Iowa; **S. Birch & Sons Construction Co.,** Ford Bldg., Great Falls, Mont.; **Foley Bros., Inc.,** 900 New York Bldg., St. Paul, Minn. and **Fegles Const. Co., Ltd.,** Wesley Temple Bldg., Minneapolis, Minn. Phase 1, power house, The Dalles Dam, Wasco Co., Oregon, for U. S. Engineers, Pittock Block, Portland, Ore., \$29,820,997.

**Houston Contracting Co.,** 2707 Fern-dale St., Houston, Tex., and **H. C. Price Co.,** Bartlesville, Okla. 860 mi 30-in. welded-joint gas pipeline main through Louisiana, Mississippi, Tennessee and Kentucky for Gulf Interstate Gas Co., Oil & Gas Bldg., Houston, Tex., \$96,500,000.

**McCarthy Construction Co.,** 300 Roosevelt Bldg., St. Louis, Mo. Seven-story addition to St. Mary's Hospital, Rochester, Minn., \$3,000,000.

**D. W. Winkelman Co., Inc. and D. W. Winkelman Carolina Co.,** Box 1366, Syracuse, N. Y. 10-mi roadway, Sects. C-2 and C-3 Mahoning Co. for Ohio Turnpike Commission, 139 E. Gay St., Columbus 15, Ohio, \$8,973,237.

**S. Patti Construction Co.,** 1340 Admiral Bldg., Kansas City, Mo. Federal Supply Bldg., Kansas City, Mo. for General Service Administration, 18th & F Sts., N. W., Washington 25, D. C., \$3,692,340.

**V. N. Holderman & Sons, Inc.,** 890 Oakland Park St., Columbus, Ohio. Relocating 9 mi Route 120, Wood Co., Ohio, for State Highway Dept., State Office Bldg., Columbus, \$3,844,531.

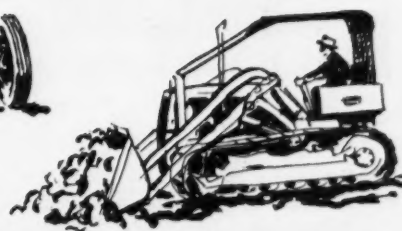
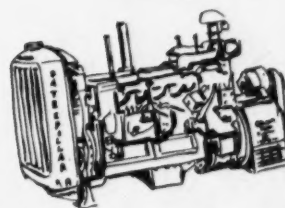
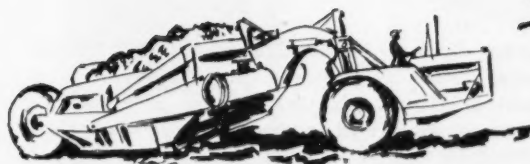
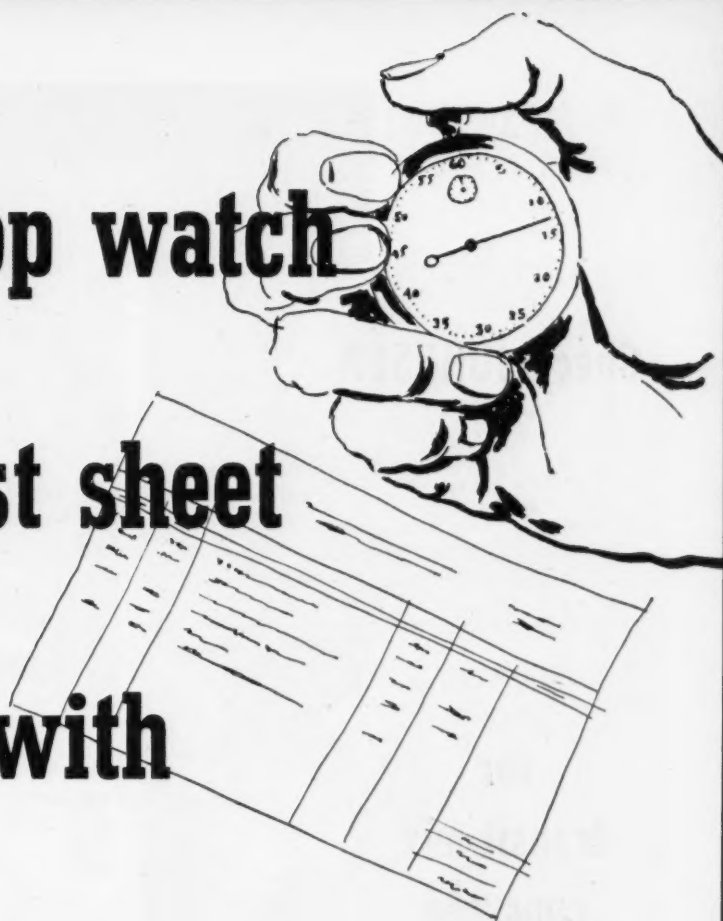
**American Bridge Div., U. S. Steel Corp.,** 71 Broadway, New York 6. (Continued on page 24)

# Use your stop watch

# and your cost sheet

# on your job with

# CAT\* equipment



**T**HERE'S one way to find out whether you're making all the profit you're entitled to. Get out your stop watch and cost sheets. Tally your cycle times and production figures. Check your down time and the resale value of your machines. These figures will convince you of Caterpillar superiority.

Your Caterpillar Dealer will give you an on-the-job demonstration. Fair enough? Call him today.

Caterpillar Tractor Co., Peoria, Illinois.

## CATERPILLAR\*

\* Both Cat and Caterpillar are registered trademarks—®

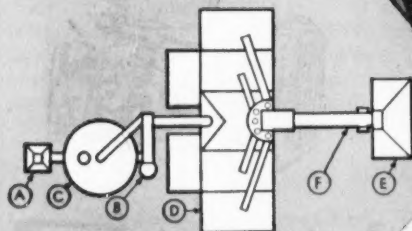
**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**



Check **JOHNSON**

"Packaged  
Plant"

for  
transit-mix  
concrete



Specially developed for low-cost production of transit-mix concrete, this plant is a typical example of Johnson "complete-package" engineering. Plant is fully Johnson-equipped. Every function, from receiving and storage of materials to final weigh-out, is carefully coordinated for fast, accurate operation. Here's how it works:

Truck-receiving hopper (A) feeds cement into a screw conveyor, which carries the cement to enclosed bucket elevator (B). 275-bbl.-per-hour elevator fills an all-welded, 520-bbl. storage silo (C), or directs the flow of cement as needed into central compartment of plant bin (D). Aggregates are received at truck-unloading hopper (E). An open, inclined elevator (F) feeds the aggregates into a

pivoted distributor, mounted at top of bin. Johnson welded tandem bin provides total overhead storage capacity of 110 cu. yds. for immediate plant use. Bin consists of four 19-yd. aggregate compartments, and a centrally-located, 250-bbl. cement compartment. On batcher floor, below bin, 2 cu. yd. Concentric Aggregate-Cement Batchers, and a Johnson water batcher accurately weigh out materials, and discharge into transit-mix trucks.

For any transit-mix, central-mix or concrete products operation, large or small, it will pay you to check the efficiency of Johnson plants and accessory equipment. See your Johnson distributor soon, or write us.

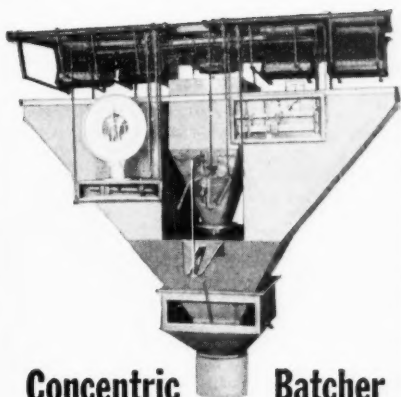
**C.S. JOHNSON COMPANY**

CHAMPAIGN, ILLINOIS • (Kochring Subsidiary)

CJ334

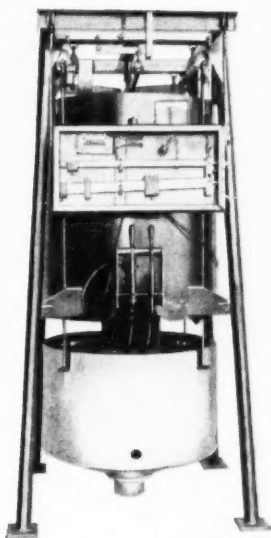


**BINS • BATCHERS • RECEIVING HOPPERS • SILOS • ELEVATORS • ELEVATING CHARGERS.**



### Concentric Batcher gives central cement feed

In this exclusive Johnson Concentric Batcher, aggregates are arranged concentrically around cement . . . prevents "gumming". Cement is weighed on separate scale; aggregates are weighed on accumulative dial scale, or on individual beam scales. Sizes: 2 to 6 cu. yds., can be arranged for 2 to 8 aggregates, plus 1 to 4 types of cement. Fully automatic, air-ram operated . . . or semi-automatic . . . or manual controls.



### Johnson Water Batcher

increases mix plant efficiency . . . gives close quality control of concrete. Accuracy is not affected by changes in water temperature. Capacities: 120-gal. (1,000 lbs.) for batches up to 3 yds., and 240-gal. (2,000 lbs.) for batches up to 6 yds. Either semi- or fully-automatic types available.

.. CLAMSHELL, CONCRETE BUCKETS

## NEW features on Kwik-Mix 16-S DANDIE®

Latest 16-S Dandie concrete mixer, interchangeable side or end discharge, has adjustable double-contact skip shaker, automatic water system, 3-point suspension mounting on heavy coil springs, cast steel drum heads with machined roller paths. Also, exclusive remixing action, and 8-second discharge with tilted Flow-Line Chute. Other models: 3½-S, 6-S, 11-S . . . bituminous, plaster-mortar mixers, power wheelbarrows.

**KWIK-MIX** (Koehring Subsidiary)

Port Washington, Wis.



## 17-FT.-PER-MIN. Parsons 88 Trenchmobile®

Rubber-tired Trenchmobile drives job-to-job at 12.6 m.p.h. . . . digs 8 or 12 in. wide, 5 ft. deep, up to 17 ft. per min. Sloping ladder boom makes vertical set-ins, undercuts sidewalks, curbs, old mains. Other features: hinged crumpler, "Tap-In" digging teeth, reversible conveyor, optional backfill blade. Also ask your Parsons distributor about the 2 wheel-type and 3 ladder-type Trenchliners® . . . all full crawler mounted.

**PARSONS** (Koehring Subsidiary)

Newton, Iowa



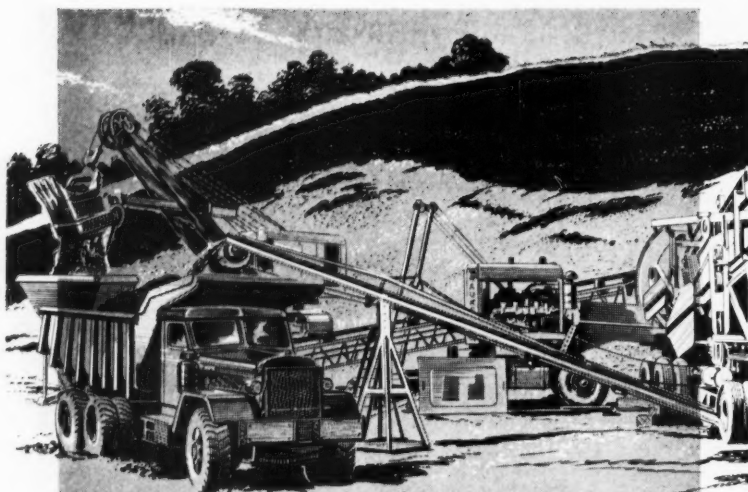
## MORE WORK-TIME with Koehring Dumptor®

With more than a ton of strength for every ton of payload capacity, Koehring 6-yard Dumptor withstands severest loading shocks. Sides, end and double-strength bottom are heavily rib-reinforced. Stationary or free-swinging kick-out pan adds another ½" steel plate to heavy-duty bottom. Gravity dump eliminates body hoist maintenance. 1-second dumping speeds haul cycles. Also check Dumptor fast no-turn shuttle hauling.

**KOEHRING COMPANY**  
Milwaukee 16, Wis.

V65





# WAUKESHA

## 1197 cu. in. 6-WAK Series POWER UNITS

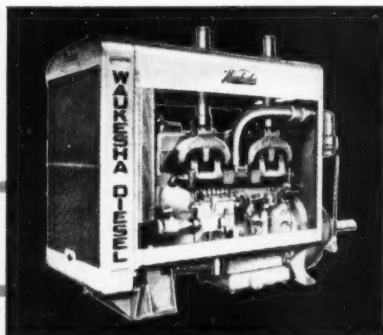
<b>WAKU</b>	<b>Medium Speed, Gasoline</b>	<b>206 hp at 1500</b>
<b>WAKBU</b>	<b>High Speed, Gasoline</b>	<b>255 hp at 1800</b>
<b>WAKDU</b>	<b>Normal Diesel</b>	<b>212 hp at 1800</b>
<b>WAKDSU</b>	<b>Supercharged Diesel</b>	<b>325 hp at 1800</b>

**Standard or Counterbalanced Crankshafts**

● Super duty! That's what the 6-WAK power units are for . . . and what they do. Here's what they have—every detail built for rough and tumble service . . . crankcase-cylinder block is a deep, thick-wall casting . . . massive, drop-forged, 7-bearing hardened crankshaft . . . pressured oil to every internal bearing, gear, and shaft . . . dual spring overhead valves with Stellite seats . . . cam ground, heavy-duty pistons . . . full-length water jacket, with removable liners . . . and other modern features—for clean burning, high economy, lively performance and long life. Send for Bulletins.

### 6-WAKDU DIESEL UNIT

6-cylinder, 6 1/4-in. bore x 6 1/2-in. stroke, 1197 cu. in. displacement.



216

**WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.**  
NEW YORK • TULSA • LOS ANGELES

### IT'S YOUR BUSINESS . . .

Continued from page 20

Tappan Zee Bridge, New York State Thruway, Westchester Co. for Bureau of Contracts & Accounts, Albany, N. Y., \$28,807,092.

**Turner Construction Co.**, 420 Lexington Ave., New York City. Two 15-story brick, steel apartments to house 996 families near Memorial Park, Detroit, Mich., for One Riverhouse, Inc., c/o Lambretch Realty Co., 1780 Penobscot Bldg., Detroit, \$9,500,000.

**Midwestern Constructors, Inc.**, 105 N. Boulder St., Tulsa, Okla. 153-mi section of 16-in. pipeline for gasoline and fuel oil from East Chicago, Ind., to Detroit, via Indiana, Ohio and Michigan for Wolverine Pipe Line Co., 11 W. 42nd St., New York 36, \$8,000,000.

**South & Patton**, First National Bank Bldg., Memphis, Tenn. Construct, manage and finance 500 housing units, Oak Ridge, Tenn., for Management Services, Inc. (Atomic Energy Comm.), Oak Ridge, \$4,422,244.

**Peter Kiewit Sons' Co.**, 345 Kieways Ave., Arcadia, Calif. Aviation fuels storage facilities at Naval Supply Depot, Point Loma, and fuels receiving facilities, Naval Air Station, Miramar, Calif. Navy Dept., San Diego, Calif., \$2,145,245.

**Morrison-Knudsen, Inc.**, 319 Broadway, Boise, Ida., developing Jackson Hole Valley, Grand Teton National Park for Grand Teton Lodge & Transportation Co., c/o contractor \$5,000,000.

**United Concrete Pipe Corp.**, Box 425, Baldwin Park, Calif., earthwork, structures, etc. Unit 2, Delano-Earlimart Irrigation Dist., Central Valley Proj. for U. S. Bureau of Reclamation, Lindsay, Calif., \$2,588,203.

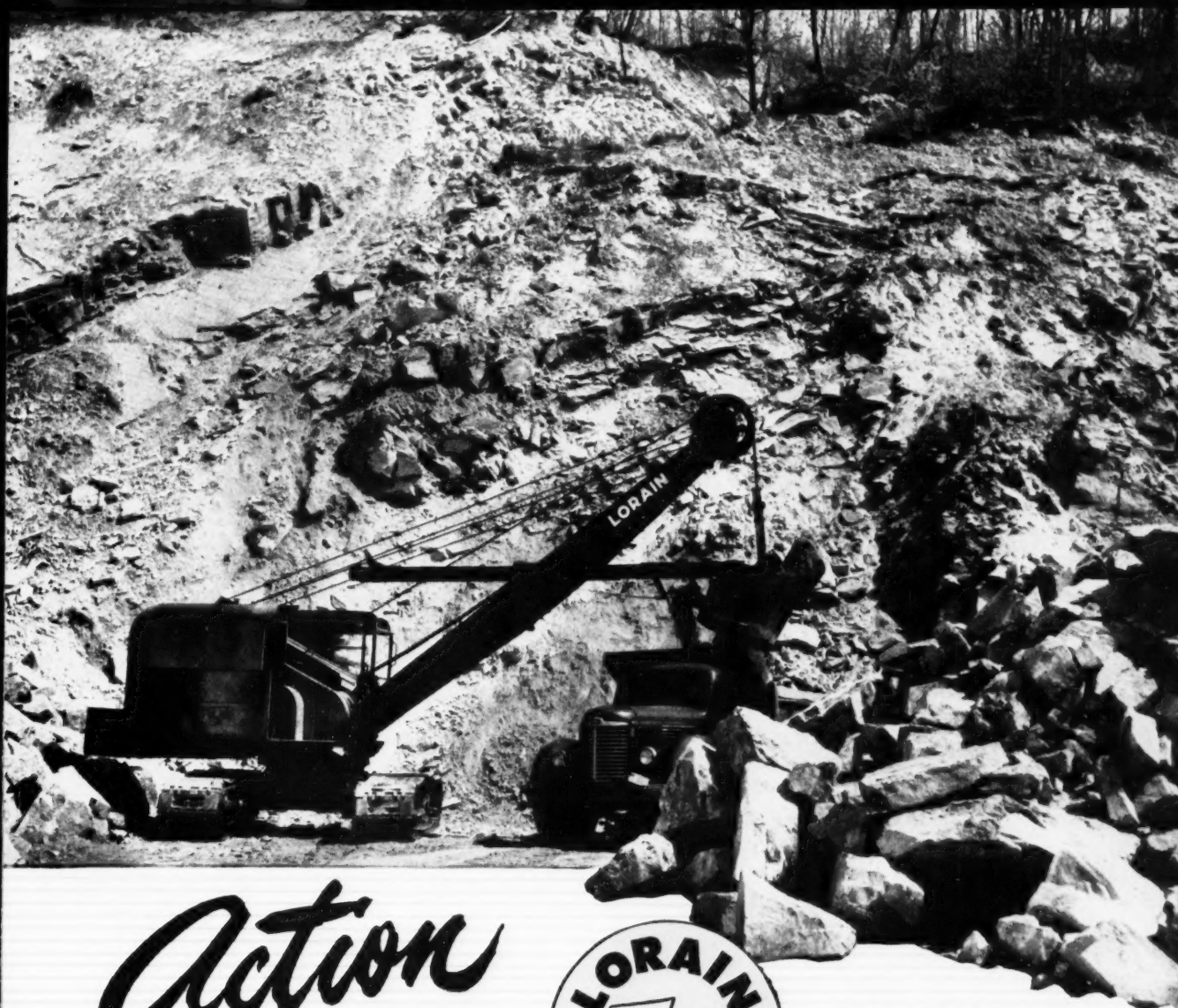
**F. H. McGraw & Co.**, 780 Windsor St., Hartford, Conn., factory, Saw Mill River Road, Yonkers, N. Y. for Habirshaw Cable & Wire Corp., 40 Wall St., New York 5, \$1,600,000.

**Pittsburgh-Des Moines Co.**, Neville Island, Pittsburgh, Pa., tanks for Logansport, Ind. Board of Public Works, City Hall, Logansport, \$1,619,049.

**Manhattan Construction Co.**, 2828 Pease St., Houston, Tex., 21-story bank and office building in Houston for South Texas National Bank, 213 Main St., Houston, \$9,569,000.

**Poirier & McLane Corp.**, 133 W. 42nd St., New York City, bridges for Garden State Parkway, N. J. Highway Authority, 1035 Parkway Ave., Trenton, \$1,297,259.





# Action PROVES

COMPARE *these* FEATURES  
IN THE 1-YD. CLASS...

When you need a 1-yd. class machine, we ask only this — see the *Lorain-50* in action before you buy!

Compare a Lorain-50 shovel *in action* with any other make. Compare design features and what they do for you, and you'll see why your investment in a Lorain will pay off.

See how the smooth-acting *Hydraulic Coupling* cushions shocks and impacts, eliminates stalling under any digging conditions, contributes greatly to longer life. See how *air controls* make the operator's job easy and add extra yards to daily output. See how the *selection of 4 crawlers* — standard, extra-long, extra-wide, and extra-long & extra-wide — can match ground and working conditions for your maximum



# FEATURES

output. See how *Center Drive* turntable construction transmits power in the most direct line to cables and dipper teeth. See how easy it is to change to any one of *5 front ends* to enable you to bid most any contract.

These, plus many other features, make up the famous Lorain "*balanced quality*" throughout the machine. For best proof of Lorain-50 features, see one *in action*!

Your near-by Thew-Lorain Distributor wants to show you a Lorain-50 in action — point out to you the many advantages that will be yours when you bid your future jobs on the basis of Lorain-50 performance. He is close to you. Call him now!

THE THEW SHOVEL CO., LORAIN, OHIO

ASK YOUR DISTRIBUTOR TO SHOW YOU A

THEW  
**LORAIN**



IN ACTION

**"Best Wire Rope Service..On 33 Draglines".**

# **Tuffy Draglines**

***Says Superintendent of a Leading Florida Rock Producing Company\****



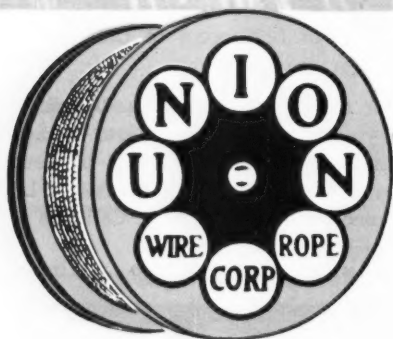
Dragline drainage ditching jobs, like this one in Michigan, call for extra flexible, extra tough Tuffy Draglines.

## **Longer Service Life of Tuffy Results in Big Savings On Rock Crushing Jobs**

"On our first comparison test, Tuffy Draglines went 26 shifts against 19 shifts for the make we had previously been using. Our second test proved even more conclusive: 19 shifts for Tuffy, 9 shifts for the other make. Now we use Tuffy Drags 100%."

These tests were conducted by a construction company that operates 33 draglines in their plants. By their own tests, they proved that Tuffy's extra flexibility, extra abrasive resistance, and extra toughness helped them cut dragline costs 40%. Discover for yourself how Tuffy Draglines can move more material for longer periods to help you reduce handling costs.

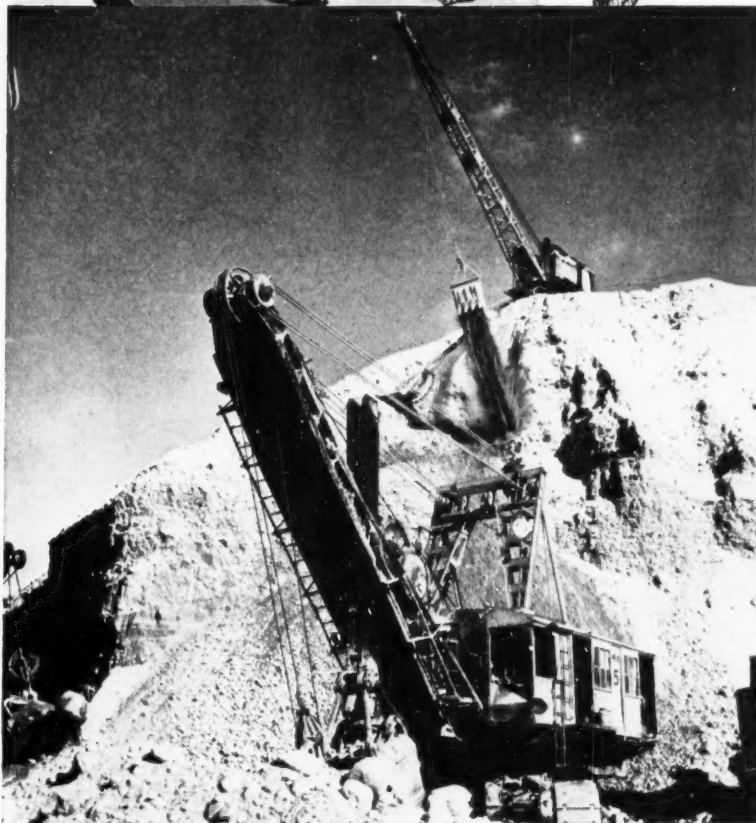
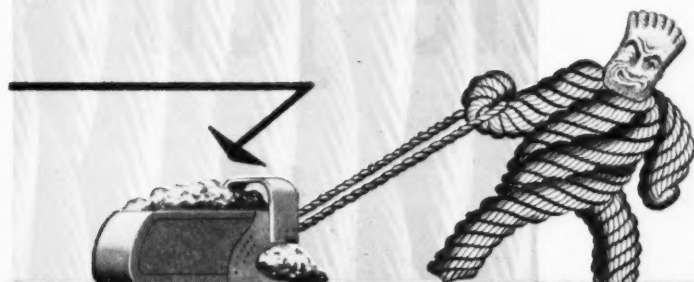
**\*(name on request)**



**union**  
*Wire Rope*  
**corporation**

*Specialists in Wire Rope and Braided Wire Fabric*

# .Since Switching To



Moving a mountain of sand and gravel laid down by a glacial stream thousands of years ago requires skill plus equipment you can count on. You can count on Tuffy Draglines for greater abrasive resistance and reduced handling costs.

Other  
Specially Designed  
**Tuffy's**  
For Special Uses



## Tuffy SCRAPER ROPE

Tuffy is tailored to take • Greater drum crushing abuse • Sharp bends over smaller sheaves • Angle pulls through swivel mounted sheaves • Crawling on flanges of guide rolls and edges of sheave housing • Multiplied impact shock of load on slack lines.



## Tuffy DOZER ROPE

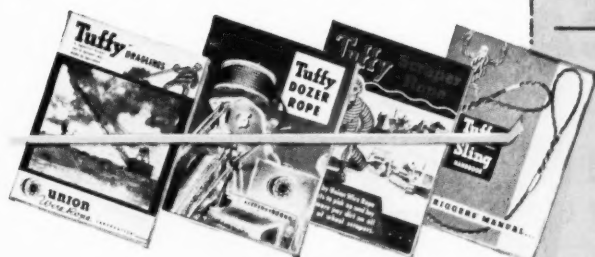
No need to throw away 40' to 50' of good rope when 10' or so is crushed or cut. With a reel of Tuffy Dozer Rope, mounted on your dozer, you feed only enough through the wedge socket to replace *only* the damaged part . . . get up to 300% increased service! And, you can make the cut and have your dozer back at work in less than *half* the usual time!



## Tuffy SLINGS

9 part machine-braided wire fabric construction fights off knots and kinks, stands up longer than ordinary wire rope. Proof-tested to twice safe working load.

SEND FOR THESE FREE FOLDERS



**union Wire Rope corporation**  
Specialists In Wire Rope and Braided Wire Fabric  
2270 Manchester Ave., Kansas City 3, Mo.

- |   |  |
|---|--|
| <input type="checkbox"/> Tuffy Dragline | <input type="checkbox"/> Tuffy Scraper |
| <input type="checkbox"/> Tuffy Dozer    | <input type="checkbox"/> Tuffy Slings  |

Firm Name \_\_\_\_\_

By \_\_\_\_\_ Title \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_



# You pick the job!



**W**HAT's the toughest blading operation you've got? Ditching? Bank-sloping? If you want to see it done better, easier, with more work output per hour, watch a Cat\* Motor Grader handle it.

Watch the operator change through the full range of blade positions in one minute without leaving his seat! Get into the seat yourself! Notice how the operator has a full view of his work without standing up. Check the steady production with no stops for adjustment.

Your Caterpillar Dealer is ready to demonstrate

any of the three models—No. 212, No. 112, or No. 12. Fair enough? Call him today.

Caterpillar Tractor Co., Peoria, Illinois.

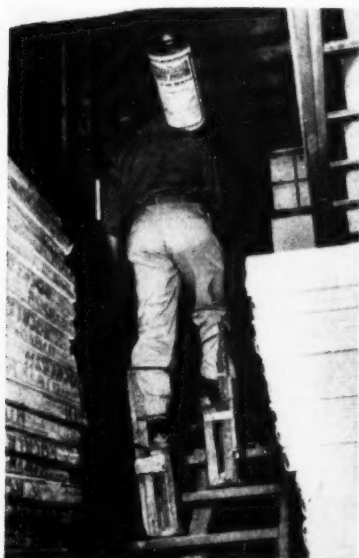
## **CATERPILLAR\***

\*Both Cat and Caterpillar are registered trademarks—®

**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**

**JOB TALK . . . Continued from p. 18**

7. Does wall have boxes, sleeves, beam pockets, inserts or anchors?
8. If wall has pilasters that require column bolts, have these been checked for column centers?
9. Do pilasters or exposed corners require chamfer strips?
10. Are footings free from dirt, ice or snow?



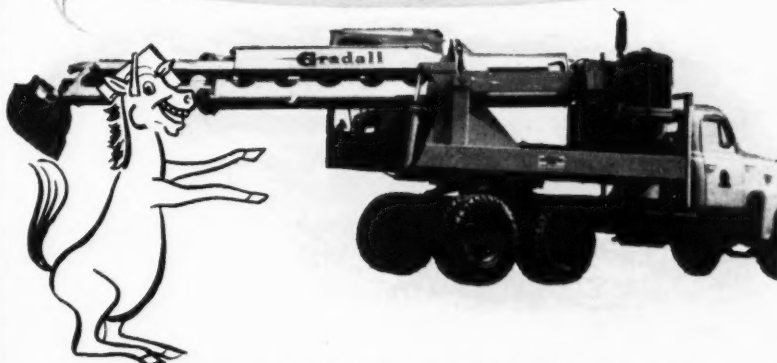
### Stilts Save Time

Most contractors probably would have trouble getting men to work on stilts to eliminate the need for ladders and scaffolding. But the Hugh R. Dodge Co., Detroit, regularly has 12 of its crew working on stilts to put insulation on ceilings. The method requires no scaffolds and company officials say it saves time. John Dinello, shown carrying a roll of insulation up a stairway, has been doing this sort of thing for the last 8 yr without accident.

### Scraper Rips Out Airport Asphalt

Quick removal of a 5-in. thick section of old runway to grade for a new one was accomplished recently by a Euclid Twin-Power scraper at the Wilmington, N. C., Airport. J. K. Cecil & Son, Lexington, N. C., contractor, put the powerful unit on the runway and found that it rolled along faster than during ordinary loading and quickly obtained struck loads.

## Let's Talk Horse Sense about Horsepower



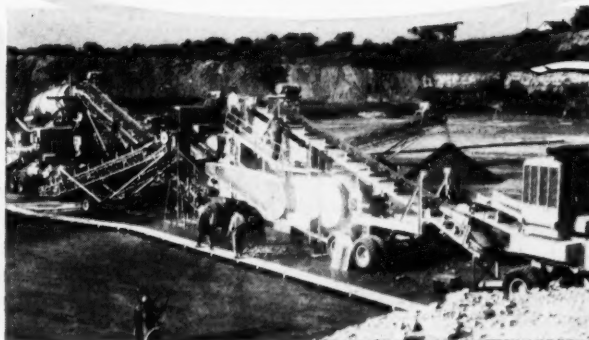
### IT TAKES MORE THAN HORSEPOWER TO GIVE YOU PRODUCTION POWER

To handle rated load capacity for long and extended periods takes more than horsepower. It takes high torque developed at moderate speeds by a heavy-duty industrial engine. Minneapolis-

Moline industrial engines are especially designed and built to stand continuous heavy load operation because they develop *more torque* at *normal* operating speeds.



**HEAVY DUTY POWER**  
means **HIGH-TURBULENCE COMBUSTION**  
plus **EXTRA HEAVY CONSTRUCTION**



Compare the extra weight and extra strength of MM Engines. Note the large, sturdy crankshaft with its husky cheeks and throws . . . the larger bearings which reduce combustion pressures . . . the extra crankcase depth below the center line of the crankshaft. Examine all these factors in terms of overall performance and longer engine life, and you'll

see there's real horse sense in every part of MM heavy-duty design.

Let's talk horse sense about value, too. MM puts heavy-duty horsepower on the high production line to give you dependable, long-lasting engines for less.

Get the facts today on front or rear power take-off and choice of rotation as well as PTO speeds that meet your needs and save you money.

**MINNEAPOLIS-MOLINE**  
**MINNEAPOLIS 1, MINNESOTA**



# All lifts are easier with a **CRANEMOBILE**

for instance...  
**LONG BOOM** for reach—  
**SHORT BOOM**  
for heavy loads—



Whether you are setting steel on a planetarium dome or pouring concrete for bridge piers, the sturdy stability and the flexible performance of the CraneMobile makes all lifts easier and makes every job faster. The CraneMobile is available in a number of sizes . . . crane capacities up to 25 tons . . . a selection of BAY CITY built carriers to meet job requirements. Here is a rubber-tire-mounted crane that will speed to scattered jobs . . . a crane packed with refinements and operating advantages to give you bigger value . . . a crane that means faster completion of every contract.

Let's consider just a few of the advantages . . .

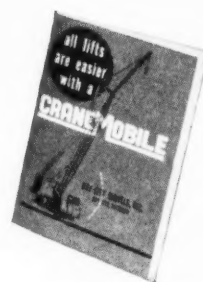
- *A collapsible high-gantry which permits lifting maximum recommended boom lengths from horizontal without outside assistance.*
- *An accurate, fast, independent boom hoist which raises or lowers boom or boom and load by power only.*
- *A power load lowering device that may be quickly engaged or disengaged to handle lowering of heavy loads smoothly and with precision.*

But that's only part of the story. Why not get complete information from your nearest BAY CITY dealer.

BAY CITY SHOVELS, INC., BAY CITY, MICHIGAN

## Write for this booklet

Get this handy pocket-sized booklet of facts and features showing why "all lifts are easier with a CraneMobile". It's loaded with information, it's neatly illustrated and it's yours for the asking . . . Write us.



215



# BAY CITY



SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS





## Every one of these drums can save you money !

These drums contain UNOBA! It's the original multi-purpose grease. Leading construction firms depend on UNOBA. They know from experience that UNOBA grease assures minimum operating costs and dependable protection for machines and equipment. UNOBA gives outstanding protec-

tion against rust and corrosion. Even steam cleaning won't remove UNOBA's tough adhesive film.

UNOBA eliminates excessive wear because its tenacious coating cushions straining and grinding metal parts, helps absorb shocks.

UNOBA is a multi-purpose grease.

By using UNOBA you reduce grease inventories . . . lessen the chance of using the wrong lubricant . . . save yourself time and money.

Give your equipment the dependable protection of multi-purpose UNOBA grease.

OFFICES: LOS ANGELES: Union Oil Building • NEW YORK: 45 Rockefeller Plaza • CHICAGO: 1612 Bankers Building  
CINCINNATI: 2111 Carew Tower Building • NEW ORLEANS: 917 National Bank of Commerce Building

**UNION OIL 76 COMPANY OF CALIFORNIA**

UNOBA was developed by the makers of T5X—the amazing purple heavy-duty motor oil.



control  
impact and  
abrasion  
with

**AMSCO AW-79**

**FOR AUTOMATIC HARDFACING**

*A new chrome-moly  
electrode for  
submerged arc welding  
equipment*

Excellent for rebuilding and hardfacing tractor rollers and idlers, back-up rolls, crusher rolls, steel wheels, sheeting rolls, as well as dozens of other applications. For complete metallurgical information and technical data, write Amsco, Chicago Heights, Illinois.

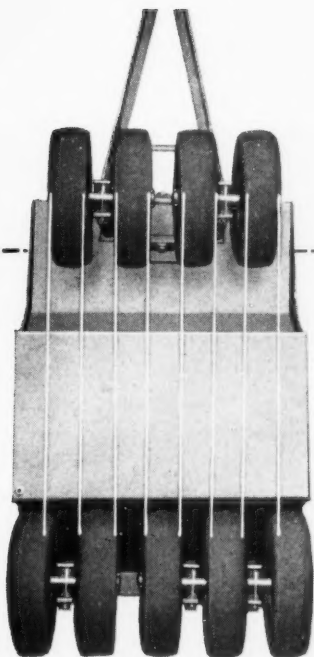


**AMERICAN MANGANESE STEEL DIVISION**

385 East 14th Street • Chicago Heights, Ill.

OTHER PLANTS: NEW CASTLE, DEL.; DENVER, OAKLAND, CAL.  
LOS ANGELES, ST. LOUIS. IN CANADA: JOLIETTE STEEL DIVISION,  
JOLIETTE, QUE. AMSCO WELDING PRODUCTS DISTRIBUTED IN  
CANADA BY CANADIAN LIQUID AIR CO., LTD.

# What's New in Compaction Equipment?



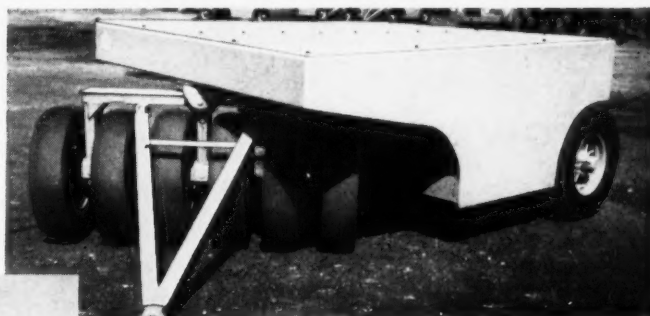
## ◀ NEW DEVELOPMENT BY BROS... EXTRA-WIDE TIRES NOW GIVE COMPLETE COVERAGE

Bros scoops the roller field! No more lines, ridges or marks when you work with new Bros Pneumatic Tire Rollers! New Bros wide-face tires give full compaction coverage in *one pass*. And you pay nothing extra — these new super-tires are now standard equipment on all three models, in both Straight-Wheel and Wobble-Wheel\* designs. For any job from rough base compaction to seal coat rolling, you'll find a new Bros Roller does it faster and cheaper.

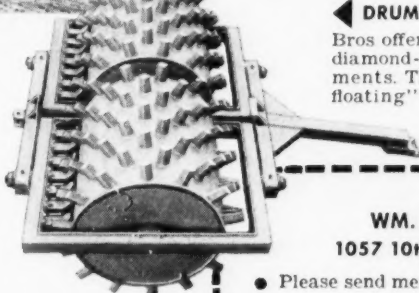
\*Patented and copyrighted by Wm. Bros Boiler & Mfg. Co.

### ▶ THREE MODELS — TWO DESIGNS ▶

Choose a 7, 9 or 13 ton maximum capacity model, and then vary working weights to suit your job. Bros Straight-Wheel design has wheels moving up and down on oscillating axles. Exclusive Wobble-Wheel\* design adds a weaving, kneading motion to each wheel. Only Bros offers both.



If compaction work is in your next job, it will pay you to find out what a difference Bros equipment can make in your time schedule and your profit figures. See your nearest distributor and mail the coupon for new literature.



## ◀ GIANT "SUPER LOAD" ROLL-O-FACTORS\*

These Bros "big boys" were featured recently in an *Engineering News-Record* article describing proved advances in compaction equipment. Roll-O-Factors\* have been more widely approved on the big jobs than any other compactor. 35 and 50-ton models available — working weights from 20,000 to 100,000 lbs. Rubber is the trend in compaction — and Bros is *first* in tried and true equipment.

\*ROLL-O-FACTOR patents: U.S.: 2,610,557; Canada: 487,945; Mexico: 52,368

## ◀ DRUM-TYPE TAMPERS

Bros offers a complete line of sheepfoot and diamond-foot tampers for special requirements. They're really rugged! New "full-floating" design eliminates strains, permits individual drum oscillation and makes handling easier.

**WM. BROS BOILER & MFG. CO.**

Road Machinery Division

MINNEAPOLIS 14, MINNESOTA

*World's Largest Manufacturer of Pneumatic Tire Rollers*

Road Machinery Division

**WM. BROS BOILER & MFG. CO.**

1057 10th Ave. S.E., Minneapolis 14, Minn.

- Please send me the new literature I have checked:
- |   |   |
|---|---|
| <input type="checkbox"/> PNEUMATIC TIRE ROLLERS | <input type="checkbox"/> GIANT ROLL-O-FACTORS |
|   | <input type="checkbox"/> TAMPING ROLLERS      |

Name

Firm or Office

Address

City  State





## 4 Powerful Reasons Why **CHEVROLET** ADVANCE- DESIGN **TRUCKS** will save money on your job . . .

**EXTRA THRIFTY POWER!** The improved Loadmaster engine in heavy-duty models has new high-compression ratio (7.1 to 1) to squeeze more power . . . more work out of every drop of fuel. In light- and medium-duty models, Chevrolet's advanced Thriftmaster engine delivers top-notch operating economy. Both give you the extra-long life and day-in, day-out dependability for which Chevrolet valve-in-head truck engines are famous.

**ENGINEERED FOR THE JOB!** Whatever you haul . . . wherever you haul it, your Chevrolet truck will be factory-matched to fit your requirements. That means you get the *right* power and the *right* chassis units throughout—tires, axles, springs and clutch—to suit your roads and loads. It means a truck that will do your job more easily . . . more efficiently.

**MORE RUGGEDLY BUILT!** New Chevrolet trucks are stronger and sturdier than ever before. Frames, for example, are heavier and more rigid. This extra, built-in stamina means miles added to truck life and dollars *subtracted* from upkeep costs! Another important "plus" you get with Chevrolet trucks!

**AND THEY LIST FOR LESS!** No other truck offers all of Chevrolet's advance-design features . . . all of Chevrolet's money-saving advantages. Yet Chevrolet is the lowest priced truck line of all! See your Chevrolet Dealer. . . Chevrolet Division of General Motors, Detroit 2, Michigan.

### CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

**TWO GREAT VALVE-IN-HEAD ENGINES**—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTIPANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.





**Wire Rope at Work**—Near Hazleton, Pa., lie rich seams of anthracite coal which in places are not far below the surface of the ground. The dragline excavator shown here, owned by A. E. Dick Contracting Co., is getting at the coal by stripping off overburden—the cover of earth that is about 120 ft in thickness at this particular point.

Using a 22-yd bucket, the excavator can scoop up thousands of cubic yards of dirt and rock per day. It works 'round the clock, with only minor interruptions. This mechanical mastodon is fitted throughout with Bethlehem Wire Rope, including twin draglines and hoist lines, visible in the picture as they handle the bucket. A typical assignment, the kind of rough, tough job entrusted to Bethlehem rope in every type of industry, wherever there is heavy lifting or hauling to be done.

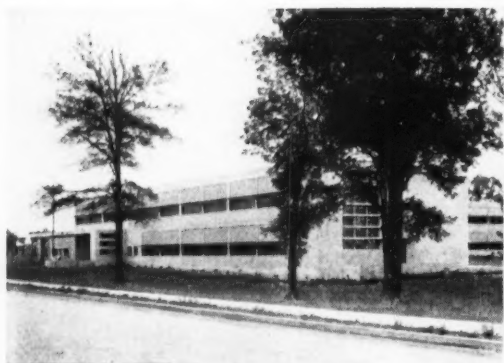
Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor Bethlehem Steel Export Corporation

Mill depots and distributors all over the country stock Bethlehem rope for the following industries and numerous others:  
 MINING • CONSTRUCTION • PETROLEUM • EXCAVATING • QUARRYING • LOGGING • MANUFACTURING



Mr. Henry O. Pommer, Vice President of  
John A. Denie's Sons Company, Memphis, agrees:

**"...controlled concrete  
calls for adding air entraining  
agent at the mixer!"**



At left, Sherwood School; ready mixed concrete furnished by Denie's Sons Company for the Harmon Construction Company, Contractor.

Like many leading producers of ready-mixed and block concrete, the John A. Denie's Sons Company of Memphis, Tennessee, is called upon to deliver concrete for a variety of construction.

In order to "tailor-make" concrete that's best for each particular job, Mr. Henry O. Pommer, Vice President in charge of Operations, has for many years utilized the outstanding benefits of air entrainment. But Mr. Pommer has also learned that many factors, in addition to the amount of air entraining agent in cement, control the amount of air actually entrained in his concrete—and be-

cause the scope of Denie's Sons operations often requires the use of as many as twelve different aggregates, Mr. Pommer knows . . . "necessary control would be impossible if we did not add the required amount of air entraining agent at mixer!"

So on your next air entrained concrete job, remember—safe, sure control is easy . . . by following "prescription" technique!

★ ★ ★

If you have any problems or questions on the use and mixing of air-entrained concrete, a Marquette Service Engineer will be glad to help and advise you—contact any Marquette office.

# Marquette Cement

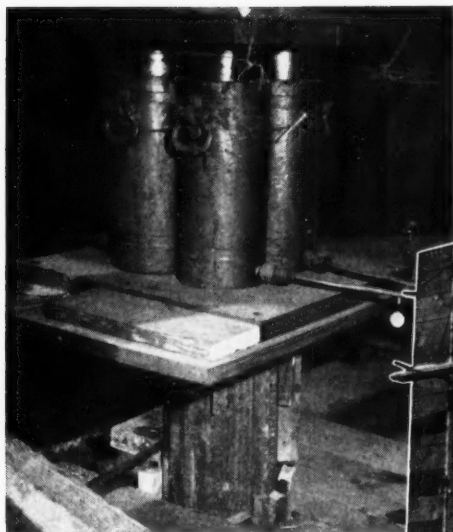
**MANUFACTURING COMPANY**

**SALES OFFICES:** Chicago • St. Louis • Memphis • Jackson, Miss. • **PLANTS:** Oglesby, Ill.  
Des Moines, Ia. • Cape Girardeau, Mo. • Nashville, Tenn. • Cowan, Tenn. • Brandon, Miss.

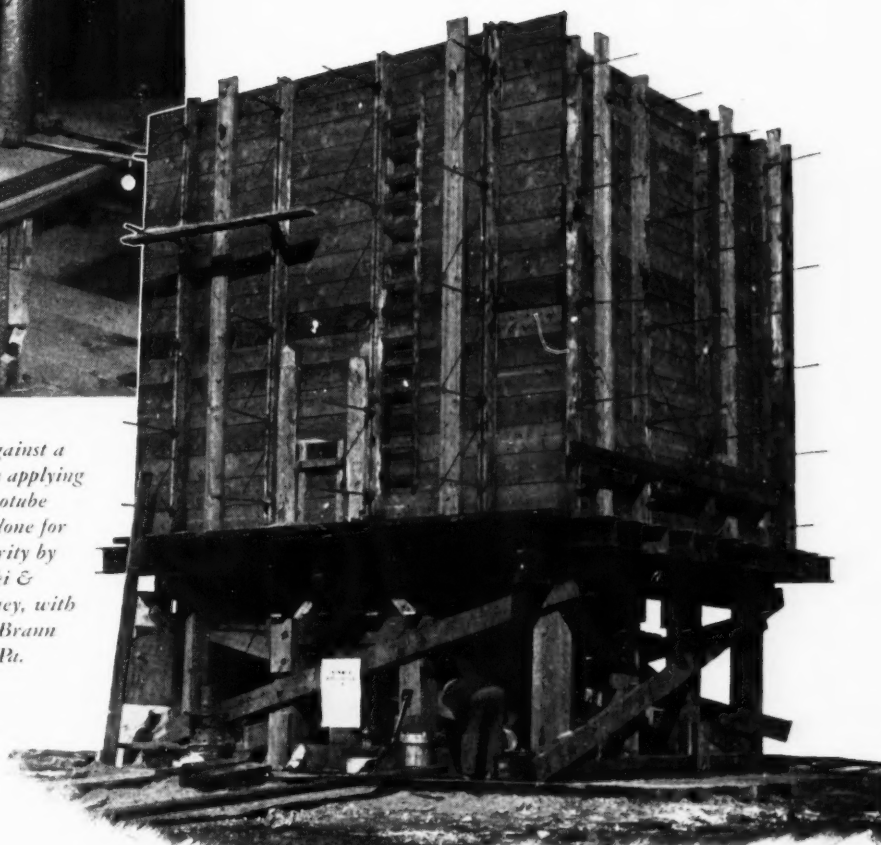
**PORTLAND • HIGH EARLY STRENGTH • AIR ENTRAINING • MASONRY**







*4 hydraulic jacks bearing against a huge sand-filled crib, used in applying 250-ton load to a single Monotube pile. This testing work was done for Delaware River Port Authority by consulting engineers Modjeski & Masters—Ammann & Whitney, with pile driving and loading by Braunn & Stuart Co., Philadelphia, Pa.*



## 250-TON PROOF of Monotube load-bearing performance

**I**N recent predesign pile loading tests, for a proposed new bridge across the Delaware at Philadelphia, Monotube tapered steel piles again demonstrated remarkable load bearing capacity. A single Monotube pile with an 8" tip and 18" butt was driven 73 feet into a dense stratum of sand and loaded to 250 tons with a net settlement of only  $\frac{1}{4}$  inch. The gross settlement was  $\frac{3}{4}$  inches and the recovery

when the load was released was  $\frac{3}{4}$  inches.

Monotubes offer many other advantages. Exceptionally strong but light in weight, they drive fast and plumb. There's no need for special rigs or heavy driving equipment. On-the-job extendibility, quick cut-off and easy handling save plenty of dollars, too! But get *all* the facts. Just write to The Union Metal Manufacturing Co., Canton 5, Ohio.



*Monotube*

*Foundation Piles*

# UNION METAL

# P&H

## Diesel Engines

(2-CYCLE)



*Are your diesels  
this easy  
to service?*

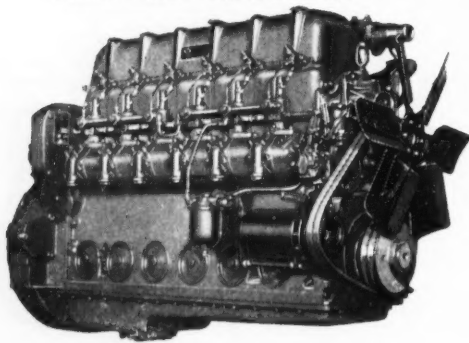
Talk about simplicity! It's hard to imagine an engine simpler than the P&H Diesel! If any service is needed, you work *only* with the part affected.

An injection pump, for example. Replace it separately — in a few minutes. You needn't replace the entire system. Or a scored cylinder: No need to take down the whole engine. A complete new cylinder head and liner assembly can be installed in 40 minutes. And if need be, you can take it from any other P&H Diesel. Think of the convenience. And the time saving!

And by the way: P&H's precision aluminum alloy bearings, with more generous bearing surfaces, have practically eliminated connecting rod bearing troubles.

Your nearest P&H Diesel representative can give you all the reasons why wise users are standardizing on this advanced line of Diesel engines. Or write us.

P&H Diesel Engines are built in 1, 2, 3, 4 and 6-cylinder models — from 20 to 138 h.p.



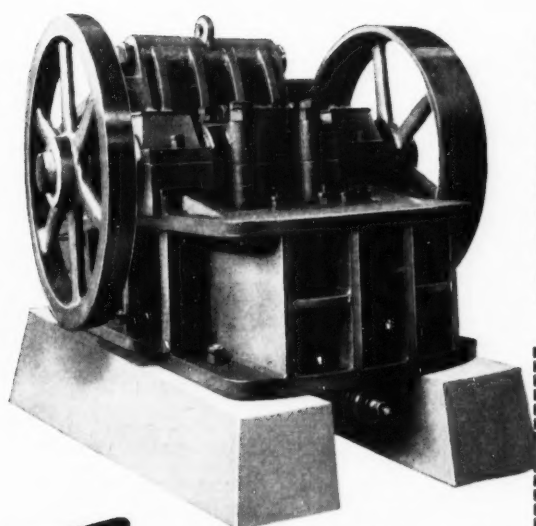
**P&H DIESEL DIVISION**  
**HARNISCHFEGER**  
**CORPORATION**  
CRYSTAL LAKE, ILLINOIS

*the* **P&H** *Line*





## FROM JOB PRODUCED AGGREGATE



Have your crusher "Traylor-Made" to match the rest of your equipment. Generally, the capacity of your power shovel bucket should determine the proper size crusher to combine efficient material handling with economical production. Traylor Jaw Crushers are built in 33 sizes. The largest handles run-of-quarry rock passing through a 5 cubic yard bucket. All Traylor Crushers are equipped with Traylor Curved Jaw Plates. These curved crushing surfaces produce a uniform cubical aggregate to meet the strictest engineering specifications. Traylor Jaw Crusher bonus values . . . fewer waste fines . . . more efficient use of power . . . further insure maximum savings from job produced aggregate. Mail coupon for illustrated bulletin:

**TRAYLOR ENGINEERING & MANUFACTURING CO.**  
597 MILL ST., ALLENTOWN, PA.

Send me bulletin 6120 which gives sizes and capacities of Traylor Jaw Crushers.

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_ State: \_\_\_\_\_

SALES OFFICES: New York • Chicago • San Francisco  
Canadian Mfrs: Canadian Vickers, Ltd., Montreal, P.Q.

# Traylor

## JAW CRUSHERS



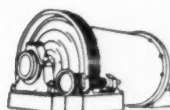
Primary Gyratory Crushers



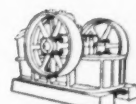
Rotary Kilns



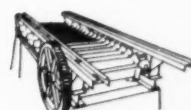
Secondary Gyratory Crushers



Ball Mills



Jaw Crushers



Apron Feeders



# A **SPECTACULAR** DEMONSTRATION of *Stang* SERVICE AND STANG KNOW-HOW



**By dewatering** the excavation and stabilizing the side slopes with STANG WELLPOINT SYSTEMS, the contractor was enabled to

- Excavate to payline with over-excavation at a minimum.
- Use high speed money making equipment for minimum excavation cost.
- Place backfill conforming strictly to specified moisture content and compaction requirements.

## JOHN W. STANG CORPORATION

*Engineers and Manufacturers of Dewatering Equipment*

BELL, LOS ANGELES CTY., CALIF.  
8221 Atlantic Avenue  
P. O. Box 631 Telephone: Logan 5-7421

NEW YORK CITY, NEW YORK  
Number Two Broadway  
Telephone: Whitehall 3-0565

TACOMA, WASHINGTON  
2339 Lincoln Avenue  
Telephone: Broadway 4362

OMAHA, NEBRASKA  
2123 South 56th Street  
Telephone: Walnut 7796

## Gradall Makes News in Houston

Here is a full page feature story from the Houston, Texas Sunday Chronicle. In it Staff Writer Dick Tate reports his interview with Mr. H. C. Hord, Superintendent of Houston's City Street Repair Division. Mr. Hord's enthusiastic approval of the Gradall, plus the fact that the city owns six of these multi-purpose machines, shows that the Gradall is cutting costs and winning supporters in Houston!



## Ditch Diggin' Demon

BY DICK TATE  
Staff Writer

"JUST STRAP a razor on the bucket and I'll shave you with it."

That's what Superintendent H. C. Hord, city street repair division, thinks of the new street repair equipment recently acquired.

Actually the machines (the city bought six) are used for ditch cleaning and digging as well as other street repair chores. But they are so delicately controlled that they are almost human in some respects.

Mounted on trucks, they are a sort of junior-sized dragline. However, they are equipped with precision controls that enable the operators to perform hair-splitting feats impossible with heavier and more cumbersome draglines, Mr. Hord said.

The digging or bucket end is hydraulically controlled with a "wristlike" action which allows the operator to shape ditches or dig excavations within an inch or less of the desired grade.

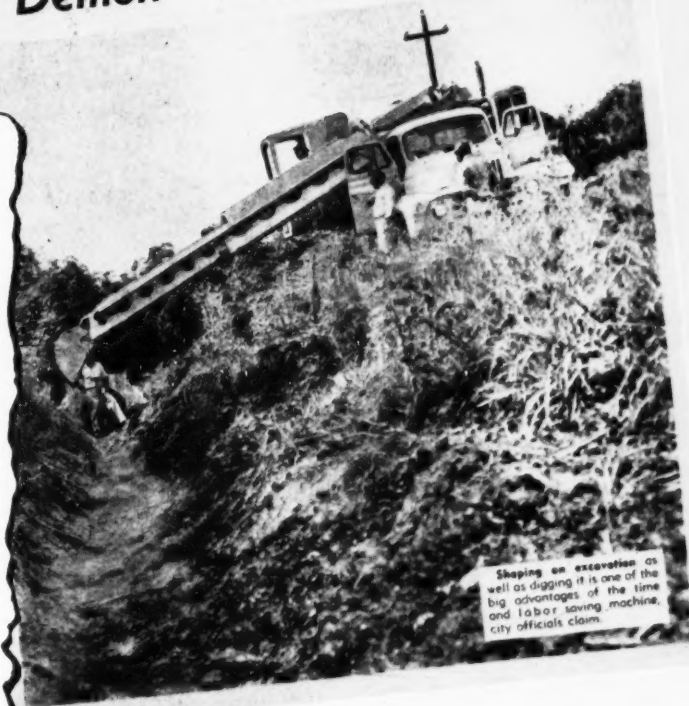
"With a dragline you are lucky to come within six inches of grade," Mr. Hord declares.

The machines are used not only for ditch digging and cleaning on which jobs they have proven to be a great labor saver, but also in digging trenches for sewer and water lines.

On both jobs, however, they not only save man power, but time as well. A crew of men working on ditches or trenches digs out the dirt, then tosses it on the side of the excavation, then has to pick it up later from that point and load it into trucks, Mr. Hord said.

"The new machines pick it out of the ditch—shape the excavation while doing it and toss it into a waiting truck—all in one sweep," he added.

"We haven't tried it yet, but I'm sure I could pick up a glass of water with it and hand the glass to you without spilling a drop," Mr. Hord said with a grin.



Street Repair Division Proud  
Of New, Versatile Equipment

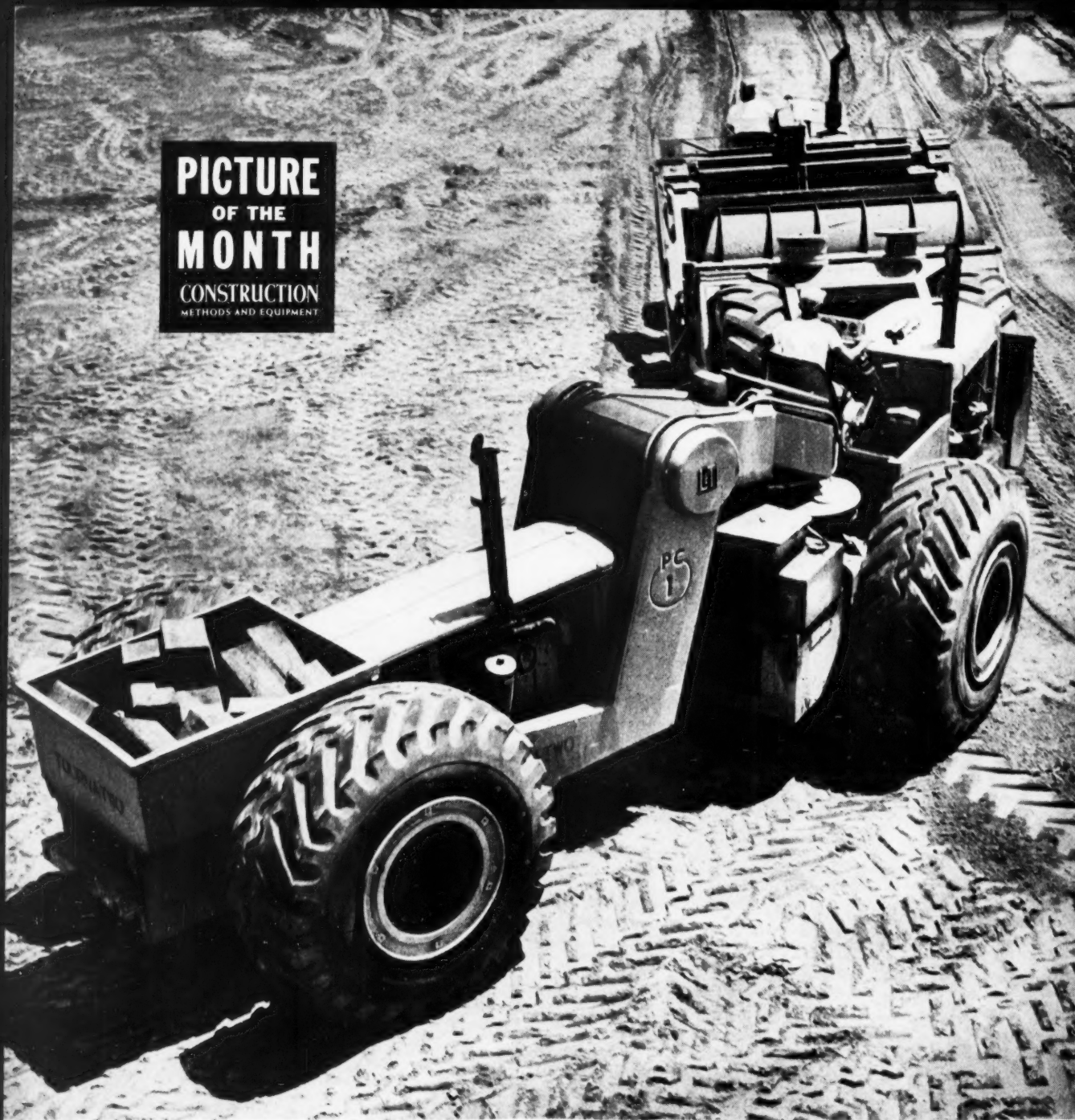
# Gradall

Gradall Distributors  
in over 75 principal cities  
in the United States and Canada

**WARNER  
&  
SWASEY**  
Cleveland  
PRECISION  
MACHINERY  
SINCE 1880

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

**PICTURE  
OF THE  
MONTH**  
CONSTRUCTION  
METHODS AND EQUIPMENT



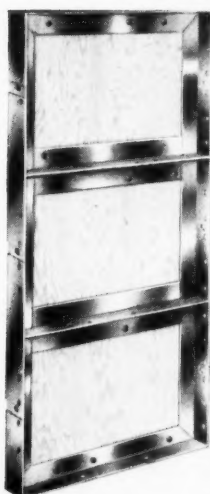
## The Big Push

THERE'S PLENTY OF POWER—and speed, too—in this monster pusher with which Union Building & Construction Co. kicks its scrapers out of the pit on a stretch of the Garden State Parkway in New Jersey. The articulated LeTourneau Tournatwo sports two 187-hp GM 6-71 diesels, each driving one set of wheels through its own transmission and torque converter, to give it forward speeds up to 33 mph. More important on Union's grading job is the machine's 14-mph reverse speed that lets it scuttle back fast to the end of the pit to meet the empty scrapers as they come barreling in from the dump. Under its powerful nudging, a 14-yd scraper is filled to overflowing and is on its way in 25 sec, less than half the time required with a crawler push-tractor. And even though the material is tough-to-load dead sand, each of the scrapers (two LeTourneau C Roadsters and six Allis-Chalmers TS-300s) averages 125 yd per hr on a 1,200-ft haul. To operate in this lifeless stuff, the 25-ton Tournatwo is fitted with special 33-in. wide Firestone tires 80 in. high that carry only 30 lb of air, and its tail box is ballasted with 5 tons of iron.



# Simplified Concrete Forming System *for Lowest all around Form Costs!*

## 3 BASIC ELEMENTS



### UNI-FORM Panels

Prefabricated . . .  
ready to use when  
they reach your  
job.



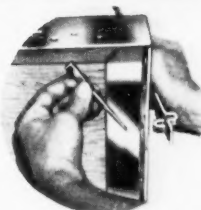
### UNI-FORM Tie

Locks, spreads  
and ties . . .  
absolutely  
accurate.

### UNI-FORM Tie Key

Wedge-Shaped for  
fast, easy inser-  
tion.

## 3 SIMPLE OPERATIONS

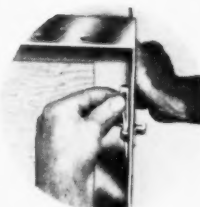


1

Place the Uni-Form Tie Loop  
into the Tie Hole.

Set the Tie Key into the Tie  
Loop. Panel and Tie are then  
locked into one integral unit.

2



3

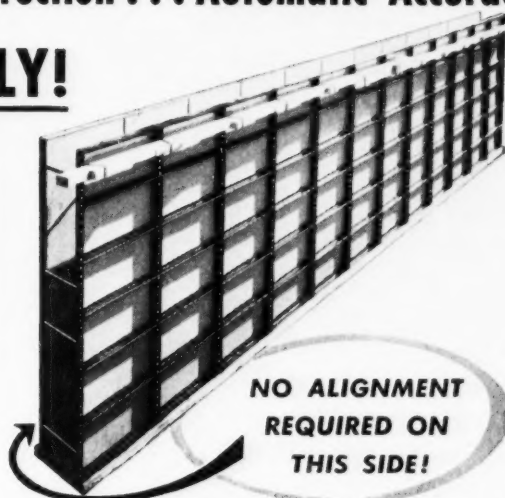
Bring the next UNI-FORM  
Panel into position . . . insert  
the Tie Key. The as-  
sembly is now completed.

**UNI-FORM® Panels Assure Faster Erection . . . Automatic Accuracy  
ALIGNMENT ON 1 SIDE ONLY!**

## FREE Engineering Service!

Complete job analysis . . . forming recommendations,  
bills of material supplied by our staff of experienced  
engineers . . . **PLUS** . . . Field Service . . . anywhere . . . any-  
time to insure proper starts and maximum economy on  
your job. Send us a set of plans for **FREE** estimate.  
No obligation.

RENTED . . . WITH A PURCHASE OPTION



**NO ALIGNMENT  
REQUIRED ON  
THIS SIDE!**

# UNIVERSAL FORM CLAMP CO.

GENERAL OFFICES AND FACTORY: 1238 N. KOSTNER • CHICAGO 51, ILLINOIS

OFFICES AND WAREHOUSES:

CLEVELAND, OHIO, 24901 Lakeland Blvd. • BALTIMORE, MD., 661 S. Monroe St. • HOUSTON, TEXAS, 2314 Preston Ave.

SAN LEANDRO, CALIF., 2051-9 Williams St. • LOS ANGELES (INGLEWOOD) CALIF., 241 South La Brea St.

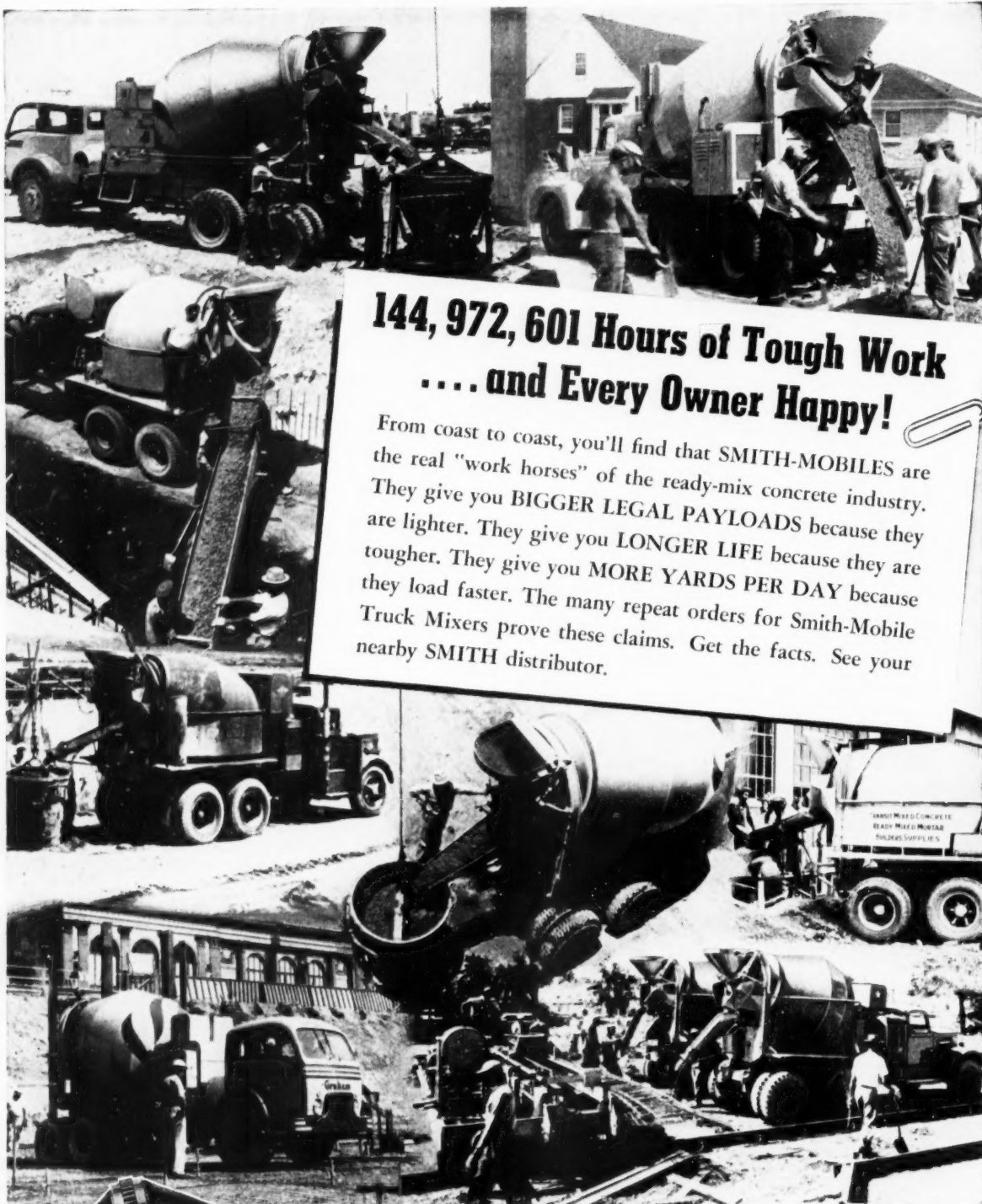
DISTRIBUTORS IN PRINCIPAL CITIES

Service  
Wherever

You Build . . . Coast to Coast



Copyright 1953 by UNIVERSAL FORM CLAMP CO., Chicago 51, Ill.



## 144, 972, 601 Hours of Tough Work .... and Every Owner Happy!

From coast to coast, you'll find that SMITH-MOBILES are the real "work horses" of the ready-mix concrete industry. They give you **BIGGER LEGAL PAYLOADS** because they are lighter. They give you **LONGER LIFE** because they are tougher. They give you **MORE YARDS PER DAY** because they load faster. The many repeat orders for Smith-Mobile Truck Mixers prove these claims. Get the facts. See your nearby SMITH distributor.

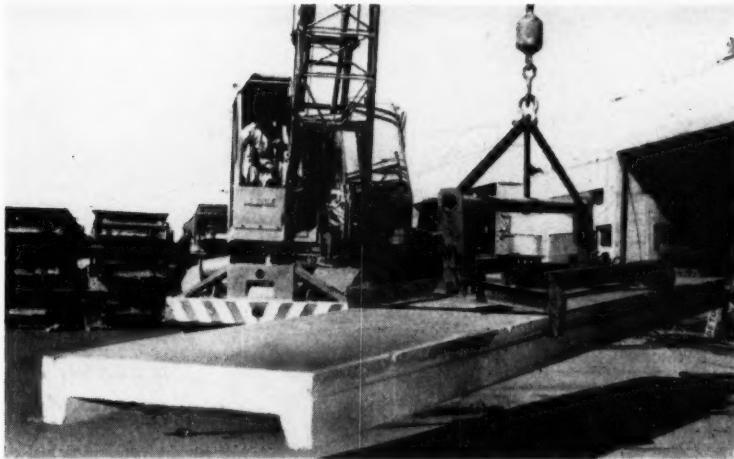


**THE T. L. SMITH COMPANY**  
2851 North 32nd Street • Milwaukee 45, Wisconsin, U. S. A.  
Affiliated with ESSICK MANUFACTURING CO., Los Angeles, Calif.

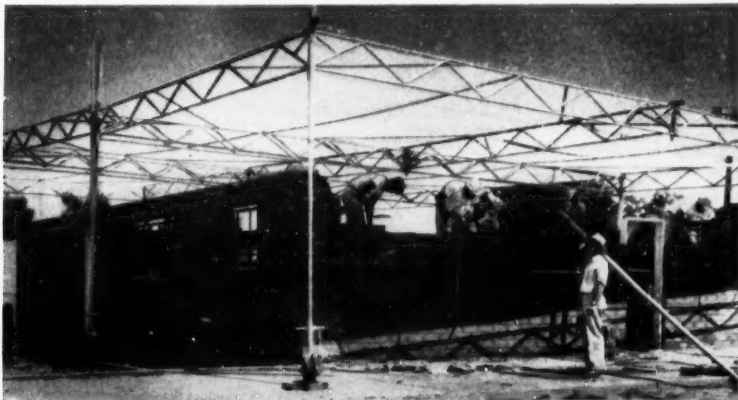
# CONCRETE MIXERS

For **BIGGER** and **BETTER** Concrete Mixers and Truck Mixers . . . **LOOK TO SMITH**

## Construction News in Pictures



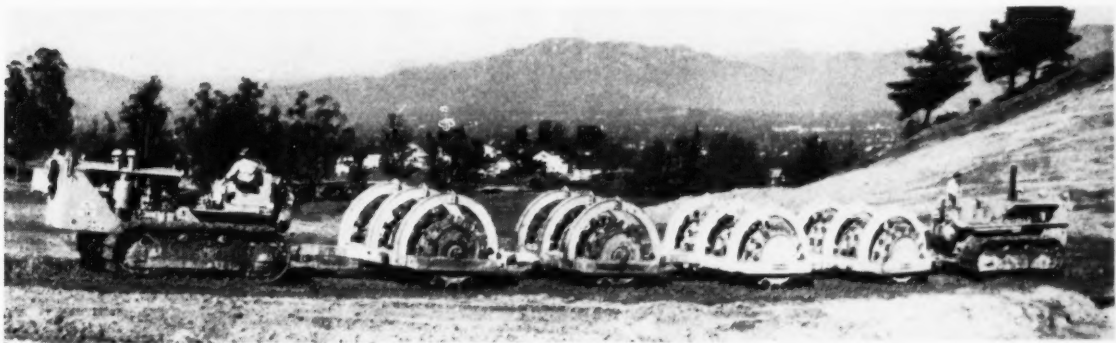
**SLAB LIFTER** — Job-built steel lifting frame fits neatly into the side grooves of a precast concrete roof slab as crane transfers slab from stock pile to the roof of a new Navy hangar at Miramar, Calif., during construction.—Navy photo



**PORTABLE SUNSHADE** — John Wilnau and Neca Malugin, Phoenix, Ariz., contractors, devised this aluminum frame with shade cloths to protect bricklayers from the sun in the Southwest's 100-deg plus temperatures. Four men can move the frame on its rubber-tired wheels. The first such move ended in disaster. A strong wind caught it sans guy wires, dumped the shelter into a twisted heap. It is being rebuilt.



**DRILLING BY JET** — Jet piercing of blast holes "burns" and disintegrates rock with a rocket-type burner using oxygen and kerosene for a high-velocity flame. This is a Linde unit in Minnesota.



**COMPACTION TEAM** — Four 15-ton Southwest sheepfoot rollers shuttle across the fill with a Cat D8 at each end, one pulling and the other pushing in reverse. When the 80-ft-long

string reaches an end of the fill, the tractors merely reverse direction, consume no time on turns. Scene is Garvey Reservoir, Los Angeles; contractors: Morrison-Knudsen and R. A. Westbrook.



# CONSTRUCTION 'ROUND THE WORLD



## AIR POWER FOR CONSTRUCTION—

Pneumatic-powered construction equipment is finding its way around the world, like all other equipment helping to raise the standard of living in distressed areas. This picture was taken in Austria on a

hydroelectric project—the Limberg Dam at Kaprun. Although crude and slow by American standards of drilling holes, these two workmen use a small drill as effectively as possible in getting ready for a blast.—Eastern Publishers photos



**MORE AIR POWER —** Compressed air works well in Rangoon, too. Here a native worker uses an air hammer to rivet steel on pontoon jetties for Rangoon Harbor. The operator holds the hammer and applies pressure with both hands downward on the rivet and keeps it from slipping away with one of his feet. Construction materials were supplied by ECA funds.



**AND MORE AIR POWER —** One native African backs up his sandal-shod partner on a plank as they shove their drill against tough Uganda rock in the building of Owen Falls Dam at the headwaters of the Nile River at Lake Victoria. Drilling expert "Jock" McDove explains a point to the two men as he strives for greater production with less drill breakage.

# **TRUCK OWNERS! You tell us** **what your present truck is worth** **in trade on a brand-new DODGE**



**Best truck  
deal ever!**

## **Dodge trucks give you:**

7 great engines with 100 to 171 h.p. • Advanced braking • No-shift Truck-o-matic transmission available in 1/2-, 3/4-ton models • Shorter turning than competitive makes • Unusually low loading height • Completely rustproofed sheet metal • Full-vision, solid-comfort cabs.

Save money every mile with

# **DODGE**

## **"Job-Rated"**

# **TRUCKS**

Fill in the appraisal form below, mail it to your Dodge dealer! He's anxious to trade and will do his level best to meet your terms!

**No cost, no obligation!**

Here's your chance to make the trade of a lifetime on a brand-new Dodge "Job-Rated" truck! And there's no dickering, no beating about the bush! Just do this:

Decide what you believe your present truck is worth. Put your trading price on the appraisal form below, tear out the form and mail it to your Dodge dealer. He's anxious to trade, and will do his level best to meet the price you put on your present truck. If he can't meet your price, there's absolutely no obligation. If he can, you've got a "name-your-own-price" deal! You've everything to gain, nothing to lose, so mail the appraisal form today!

**Cut out and mail this appraisal  
form to your  
Dodge dealer!**

or phone in the information

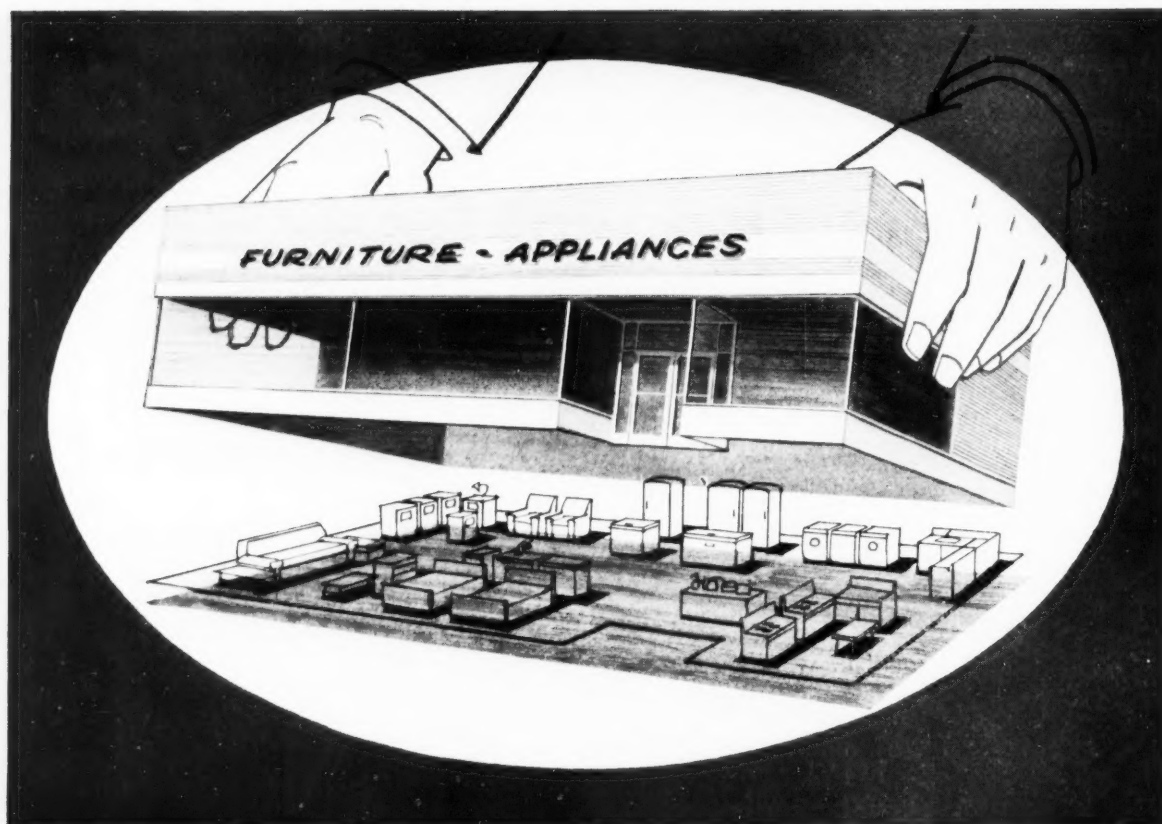
(See Classified Section of Telephone Directory for address)

I have a \_\_\_\_\_ truck, in \_\_\_\_\_  
(year, make, model) (good, fair, poor)

condition. I think it is worth \$ \_\_\_\_\_ in a trade.  
 I understand that you are not obligated to meet this price,  
 nor am I obligated to accept it.

Name \_\_\_\_\_

Mailing Address \_\_\_\_\_



## Here's another profitable store front market

Have you, as a builder, considered the modernization-conscious furniture and appliance retail business as a year-round source of profits for you?

Since their suppliers are continually stressing advances in modern merchandise, home furnishings retailers are extra aware of the benefits of modernization. They know how an attractive modern store front can increase business, and many are doing something about it. Here's your chance to let home furnishings furnish you with a profit.

And when you do original construction for or remodel

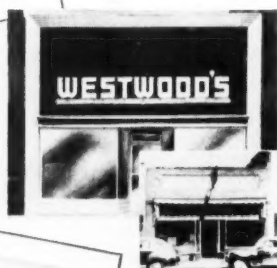
furniture and appliance stores, you can rely on Kawneer products and services. Kawneer architectural metal products, doors and entrances, and colorful Zourite aluminum facing, are the finest products for any kind of building front modernization.

And Kawneer service means that while your crew handles other phases of the job, you can subcontract building front installation to the expert personnel of a nearby Kawneer Installing Dealer.

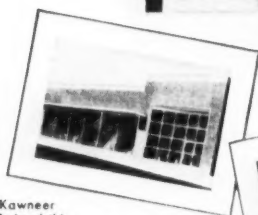
Special training enables him to help you do a better job, make a better profit. He is listed under "Store Fronts" in the classified pages of your telephone directory. Call him today, or write Kawneer, Niles, Michigan. Ask about the new, important-to-you "Kawneer Builder-Contractor Plan."



Typical Kawneer furniture store application.



Before, left. After, above. Kawneer appliance store modernization



Kawneer helped this home furnishings store.

Kawneer modernized this appliance store.

Store Fronts

Aluminum Awnings

Doors and Entrances

Zourite Facing

**Kawneer**

NILES, MICHIGAN  
Berkeley, Calif. • Lexington, Ky.



Harold W. Richardson, Editor

## One United Construction Union

### 1. What it Would Mean to Contracting

BECAUSE of its increasing complexity, modern construction is surpassing the ability of the traditional craft union system of organized labor to function properly and efficiently for all concerned—both labor and contracting. New construction techniques, equipment and materials are developing so fast that craft unionism cannot keep up with them. Consequently, the present type of construction union organization, based on craft divisions, is putting a brake on construction progress to the detriment of the nation's economy, and the welfare of contracting and labor.

It is now high time for the best minds in both organized construction labor and contracting to start thinking about, and planning for, the inevitable development of one single, united construction union. Inevitable, we believe, because construction, as this country's largest industry, simply will not remain fettered by a labor system that is rapidly becoming archaic in the modern construction world.

Labor, in this proposed single construction union, would, as we see it, be broken down into three classifications: unskilled, semi-skilled, and skilled. There would be a wage differential among the three classes, but every worker in each class would receive the same pay. Probably, also there should be wage differentials according to geographical regions and areas, but already these pay spreads are slowly narrowing down, and might be eliminated entirely sometime in the future.

What would such a labor system mean to construction—both contracting and union elements? Let's first discuss what it would mean to contracting.

First of all, we believe, it would do much to stabilize construction conditions and operations, and lower the cost of building—not by taking it out of the hides of the workers, as some labor leaders will scream, but by greatly in-

creasing the efficiency of construction procedure. Of course, contractors would continue to use workmen according to their best skills and training, any other procedure would be foolish and wasteful. Under the present craft jurisdictional system, the contractor is forced to obtain a worker from a separate union for practically every different construction operation.

Many of these operations are of short duration. To bring in a certain class of worker to perform them causes delay and economic waste. The united union system would develop more all-around construction men. Why shouldn't a carpenter be allowed to tie reinforcing steel for a few hours if the occasion warrants? Why shouldn't a steel worker nail up a scaffolding when necessary? Why shouldn't a bricklayer finish concrete at times? The skilled worker would receive the same pay, regardless of what he was doing. Any momentary loss of efficiency in switching men from one operation to another because of possible lack of top skill would be more than offset by eliminating the necessity of bringing in a specialist for a task of short duration.

The united union plan would be a blessing to contracting in the reduction of thousands of labor contracts, now necessary to negotiate throughout the country, to a relatively few based on geographical areas. There would be a uniformity in union contracts as to wages, hours, and working conditions. The present chaotic situation where one union works 6 hr, another 7 hr, still another 8 hr, all on the same job, would no longer exist.

Furthermore, the plan would abolish the exasperating jurisdictional dispute that persists in spite of all the jurisdictional boards and procedures we have developed. This feature alone would be a boon to both contracting and the workmen. Also, most workers

would be hired for the duration of the job, not just for the life of a certain classified operation.

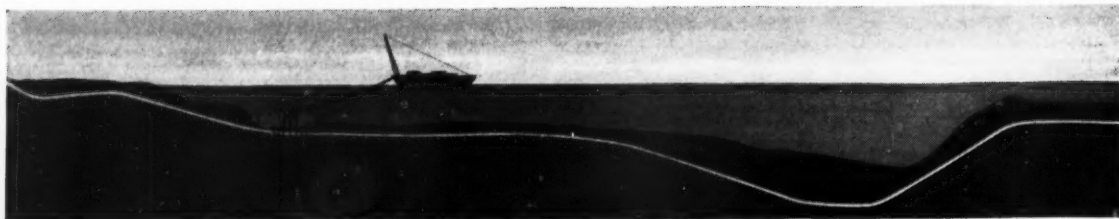
The contractor would develop a much better organization, because he could advance his workers according to their aptitude, skill and ability—and not limit their progress to any particular class of work as now dictated by the craft union system. The contractor is in an excellent position to determine whether a hustling youngster would make a better carpenter than hoist runner, for example. Apprentices largely would be developed on the job, with the idea of making good construction workers out of them rather than narrow specialists. Good men would find their opportunities for continued employment greatly enhanced.

Finally, the plan would permit unlimited expansion in equipment and materials development. No longer would a promising new material be denied to construction because of union opposition. No longer would economical mechanization of construction operations be throttled. Construction would reach its maximum in progress, expansion and economy to the untold benefit of owners, contractors and labor alike.

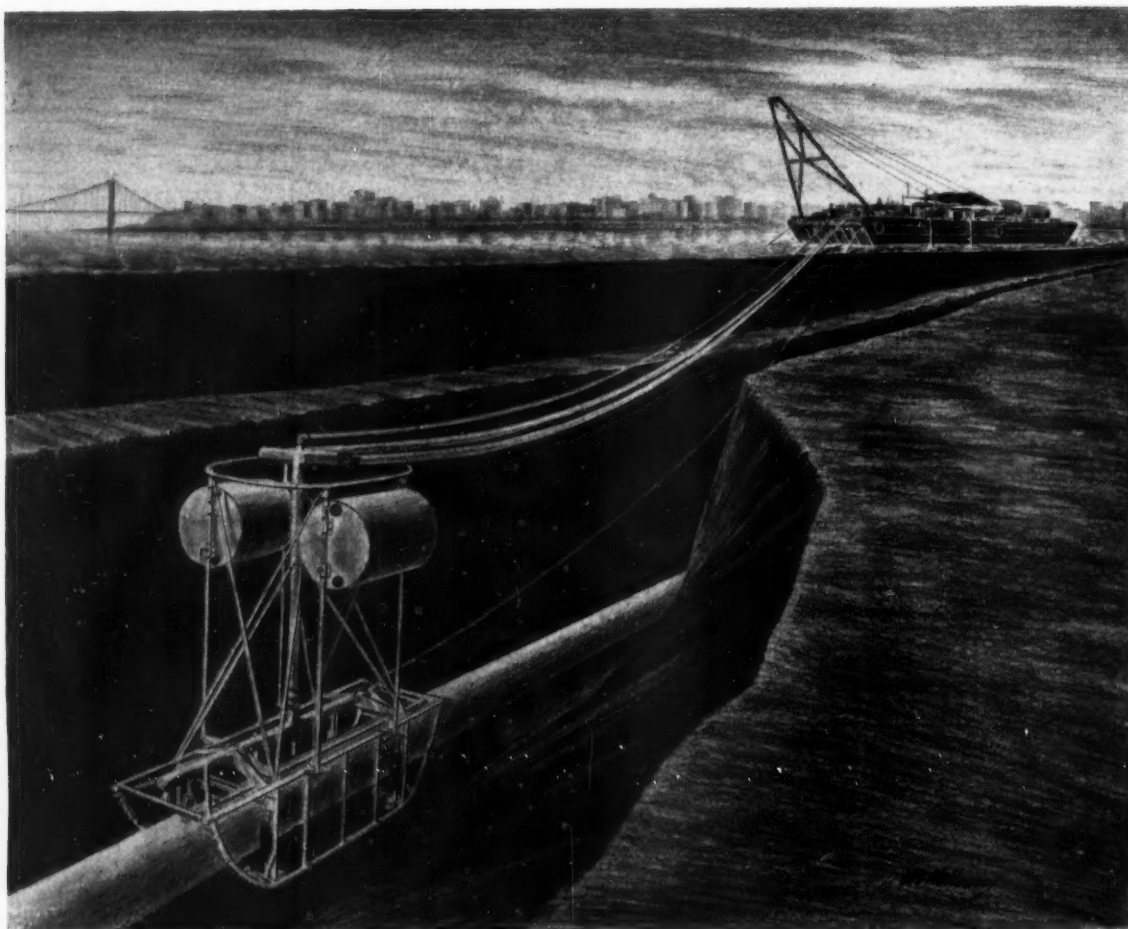
Possibly some contractors would fear the concentration of labor power in one single organization, but we believe the benefits outlined above far outweigh the remote dangers. Labor would, we are sure, assume its greatly increased responsibilities. And one obnoxious wildcatting group of a few workmen couldn't tie up the entire job, as they now do.

Next month we'll discuss this idea as it applies to labor.

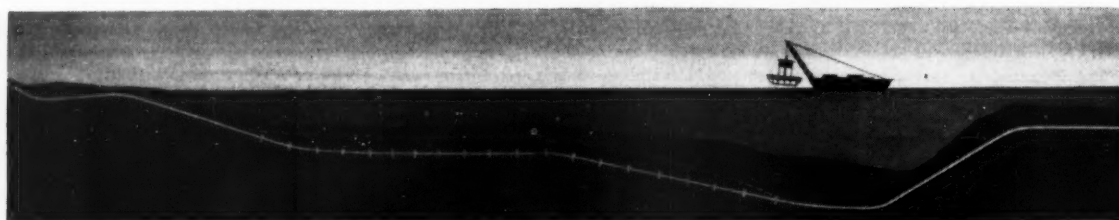




**Submarine pipeline is too high, so . . .**



**. . . Jet-action trencher lowers it 17 ft . . .**



**. . . And weights hold it there at El-80**

By HENRY T. PEREZ, Senior Associate Editor

TRANSCONTINENTAL Gas Pipe Line Corp. had a tough one: Its line under the Hudson to New York City, already buried and in service 2½ yrs, had to be lowered as much as 17 ft farther into the river bottom. Ordinary dredging was out of the question because of possible damage to the pressurized line. And a new, deeper crossing, of course, would have been prohibitively expensive. Instead, a rolling framework fitted with air and water jets was buckled around the pipeline and pulled back and forth along it. This cut a trench beneath the line, into which the pipe sank to required depth—as much as 80 ft below water.

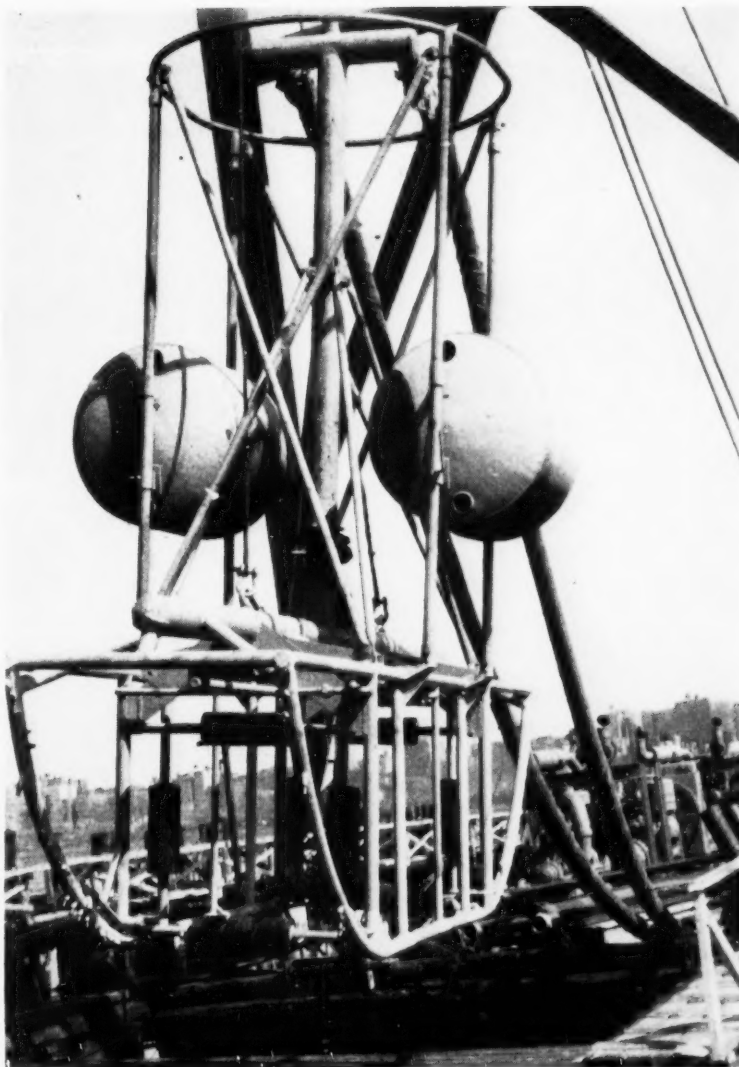
Transco's Hudson River crossing (see "Four Ways to Dunk a Pipeline," CM&E, June '52, p. 56) is 26-in. O.D. pipe with a 1½-in. wall, which weighs 307 lb per ft in air. The line is coated with ¾ in. of Somastic and protected by 1x2-in. wood slats banded on with steel strapping. While total crossing length is 4,800 ft, only about 2,400 ft had to be lowered. This was over toward the New Jersey shore, where river bottom is 20 to 65 ft below mean low water.

#### Bottom Is Silt and Clay

In this area, where bottom material varies from fine silt to medium-hard blue clay, probing showed that the pipe had only 10 to 17 ft of cover and varied in elevation from -40 to -80. Army Engineers, however, required that the line be a minimum 20 ft below bottom, or on the 50-ft contour line, whichever was deeper. To put the pipe down to that depth, Transco called in Sammy Collins of Collins Construction Co., Victoria, Tex. This submarine pipeline specialist rigged up an enlarged version of his patented jet-type trencher that has been used successfully to bury many lines in the Gulf of Mexico.

The submarine trencher, which is handled by a barge-mounted A-frame derrick, consists of a framework of welded piping fitted with a series of jet nozzles front and rear. There are separate nozzles for air and for water, each type being fed through the piping of the frame itself. The water jets are set in a pattern aimed to cut and flush out solid material 3 to 4 ft below and ahead of the frame. The air jets aerate this cut material, which is now fluid, and set up a swirling action that helps carry it up and away.

Two sets of rollers fit around the pipeline to hold and guide the



**COLLINS SUBMARINE TRENCHING MACHINE** is designed to be pulled along pipeline, which its air and water jets undermine to let pipe bury itself in bottom. On this Hudson River job, trencher first had to remove average 14 ft of overburden from already-buried and pressurized gas line, then go back and forth lowering it as much as 4 ft on each pass.

trencher. The bottom roller of each set of four is hinged to open while the trencher is lowered to the line, then can be shut and latched by a diver to clamp the unit to the pipe. Rollers are of natural rubber to prevent damage to the pipe coating as the trencher moves along.

The upper part of the trencher carries two controlled-buoyancy tanks. These keep the unit upright in the water, and can reduce its 6,000-lb submerged weight to a positive buoyancy of several hundred pounds.

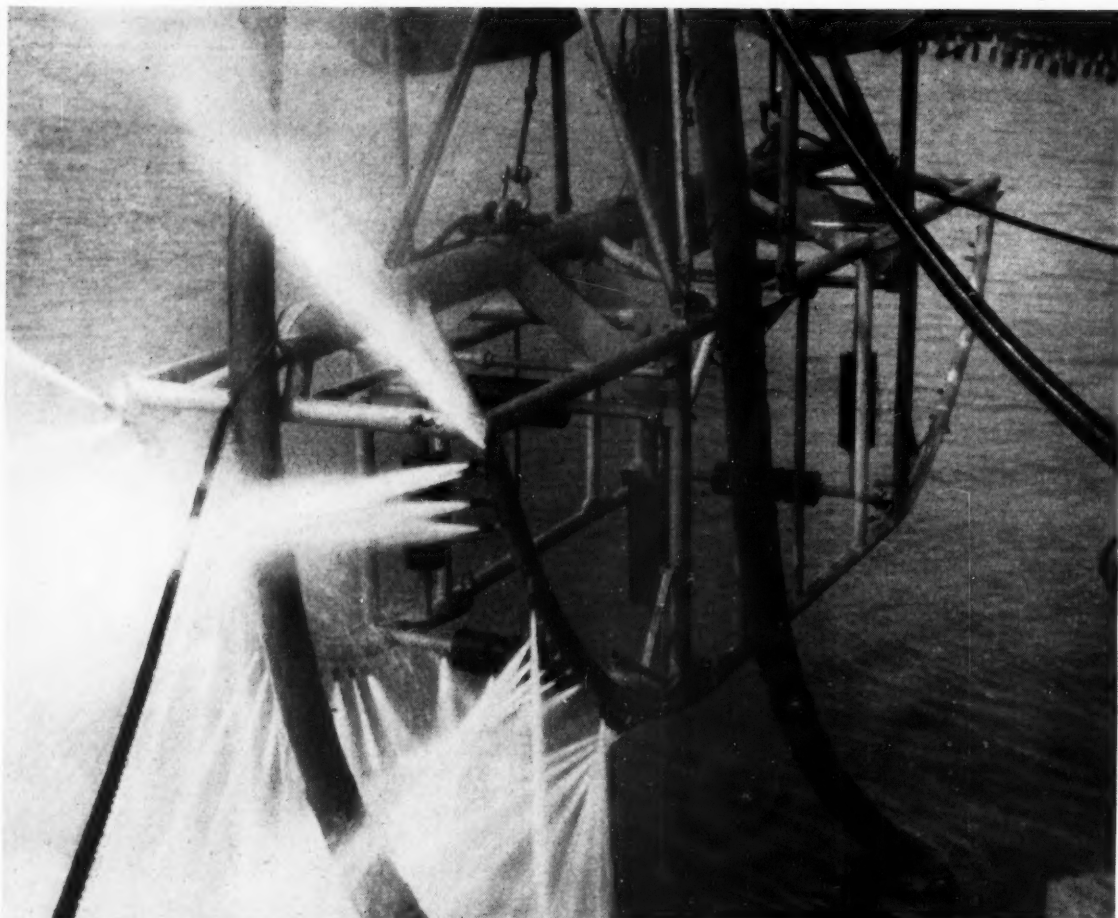
The barge that handled the trencher also carried four jet pumps and two compressors to feed its nozzles with water and air. Two of the pumps were three-stage

Peerless 5-in. (discharge) units driven by GM twin diesels. Each delivered 1,000 gpm at 300 lb pressure. The others were four-stage Goulds with Continental engines, which gave 500 gpm at 250 psi each. The pumps fed into a 10-in. pipe manifold ending in a 4-in. slamese to which two hoses from the trencher were connected. Pressure at the jet nozzles averaged 225 psi.

The two 315-cfm compressors, a Gardner-Denver and a Jaeger, were run wide open to deliver air to the trencher through a common line. Later, when harder bottom material was encountered, one 315-ft compressor was replaced with a 600-ft Worthington.

Operating procedure was to un-



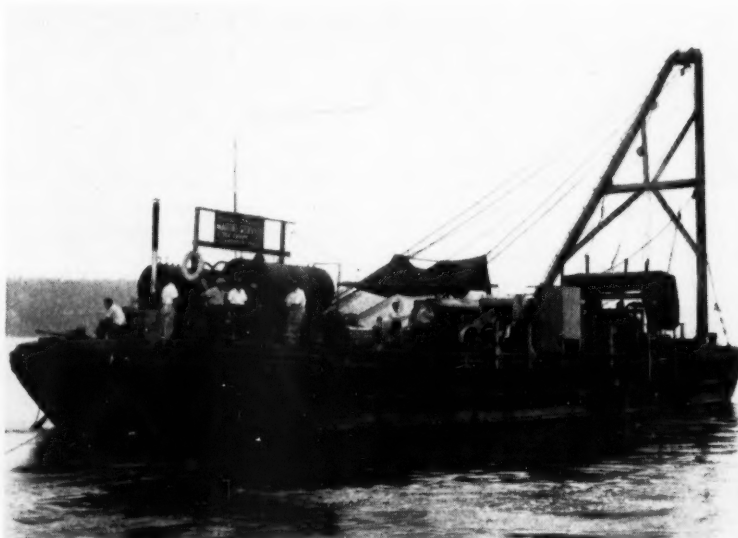


WATER AND AIR JETS that cut underwater trench are set in fan-like pattern. Here they're under only 50 psi pressure, which is stepped up to 225 psi for digging. Trencher's other end carries similar jets

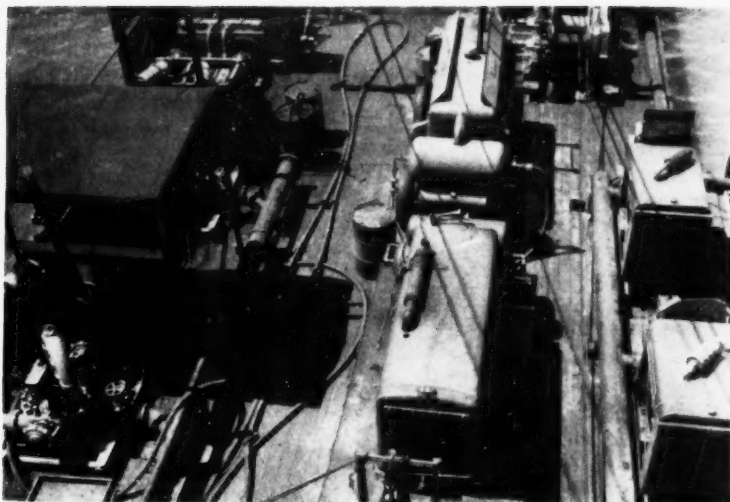
for use when working in opposite direction. The two sets of rubber-covered rollers are to hold trencher on pipeline and prevent damage to its coating as machine is pulled along.



TWO 4-IN. HOSES feed water to trencher, here held at surface to test jets. Air goes to separate jets through riser set inside water pipe. Circular ring prevents hoses from fouling trencher's controlled-buoyancy tanks that keep it upright when submerged.



OPERATIONS BARGE with A-frame derrick handles trencher, pulling it back and forth along 2,400-ft stretch of pipeline to be lowered. Because of Hudson's swift current, barge must face upstream instead of in direction of pipe, and must pull itself sideways.



**OPERATING EQUIPMENT** on barge includes (l to r) two three-stage pumps, two compressors and two four-stage pumps. They furnish trencher with 3,000 gpm of water at 225 psi, and 630 cfm of air at 100 psi. Winches (rear) maneuver barge and handle trencher.

cover the pipe in the section of least cover so the trencher could be put on. Then the barge, with lines from deck winches run out to anchors bedded in the river bottom, pulled itself and the machine back and forth over the stretch that had to be lowered. Each successive pass of the trencher lowered the pipeline an additional amount, until final depth was reached.

In making these passes, only the forward jets of the double-ended trencher were operated. When direction of travel was reversed, a diver worked a ratchet that not

only swung a valve to divert water from one set of nozzles to the other, but also turned the trencher's hose connection 180 deg to prevent kinking.

The first pass with the trencher was slow—30 lin ft per 8-hr shift—because it had to remove an average 14 ft of overburden from the buried pipe. This amounted to about 50 cu yd per ft of advance. To speed the work, an Arundel Co. clamshell dredge was brought in to help excavate the overburden. But, instead of the hazardous procedure of working right next to the line,

the dredge dug two parallel ditches 30 ft away from the pipe on either side. Dredged to a depth of 20 ft below the pipe, these slots were to relieve squeezing pressure on the ditch cut later by the trencher, and they limited the quantity of run-in.

After overburden removal, trencher progress was more rapid—100 ft per hr, or one complete pass each 24-hr day. The trench was deepened and pipe lowered as much as 4 ft on each pass, and nine complete trips were required to get the pipeline down to final grade, which was as much as 17 ft below its original position. Several hard spots required additional short passes.

River weights were then put on at 33-ft intervals to hold the pipeline at its permanent depth. More than 70 of these 2,500-lb units were lowered by a barge-mounted Koehring 503 crane and fastened by a diver to the pipe. The cast-iron weights gave the line an additional negative buoyancy of 70 lb per lin ft. This has brought its net weight up to 7 lb per lin ft in the backfill (weighing 90 lb per cu ft) subsequently formed by natural silting of the trench.

I. W. (Spider) Dods, Transco's senior pipeline engineer, was in charge of his firm's unusual and difficult pipe lowering project. Buck Germany was progress engineer. Jean Johnson was marine superintendent for Collins Construction Co., whose operations were directed by Sammy Collins himself.



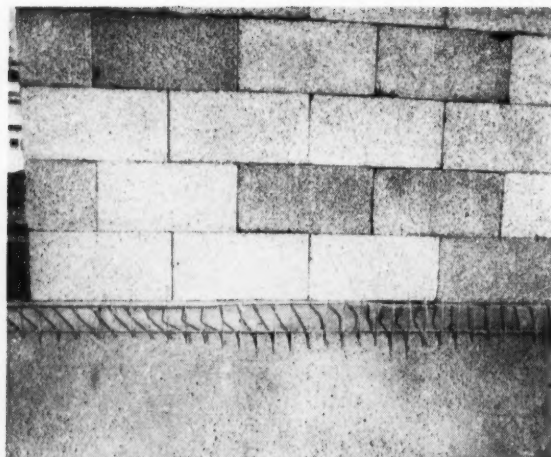
**CAST IRON WEIGHT**, one of 73, goes on pipeline to hold it at final grade. Note boil from trencher, which will be shut down before diver descends to latch weight to pipe. Original scheme was to pull weights into place along pipe, hence roller design.



**SMILING PIPELINERS** are: Sammy Collins, Collins Construction Co.; Spider Dods, Transco's chief pipeline engineer; Bobby Gates, Gates Bros. Inc., who furnished job's equipment (except Collins trencher and weights); and Jean Johnson, Collins' superintendent.



**GUNNED CONCRETE** against dry blocks ties them together, makes sound wall. Wire mesh on exterior is held by furring nails, makes possible a uniform coat  $\frac{3}{4}$  in. thick. Rough blocks got a little mortar.



**MORTARLESS WALL** as it appears right after dry blocks have been stacked. Portion of wall below blocks is finished with concrete blown against it. Various methods were followed in the experiment.

## Air-Placed Concrete Eliminates Mortar

**AIR-PLACED CONCRETE** combined with dry block construction recently was tried experimentally in the construction of a two-story building by Air Placement Equipment Co., Kansas City, Mo. Speed and ease of erection, coupled with the sound structure achieved, indicate that many buildings can be built with this method at substantial savings in materials and labor.

Lightweight dry concrete blocks were stacked on a level foundation

to standard window height. Then a facing coat of concrete was shot against the interior surface of the wall. Tests showed that the coating added sufficient strength to the dry wall to make possible laying up of the remainder of the wall in the same manner.

Next, standard 17-gage Key-Mesh was anchored to the exterior side of the wall with standard masonry furring nails—with the nails holding the mesh away from

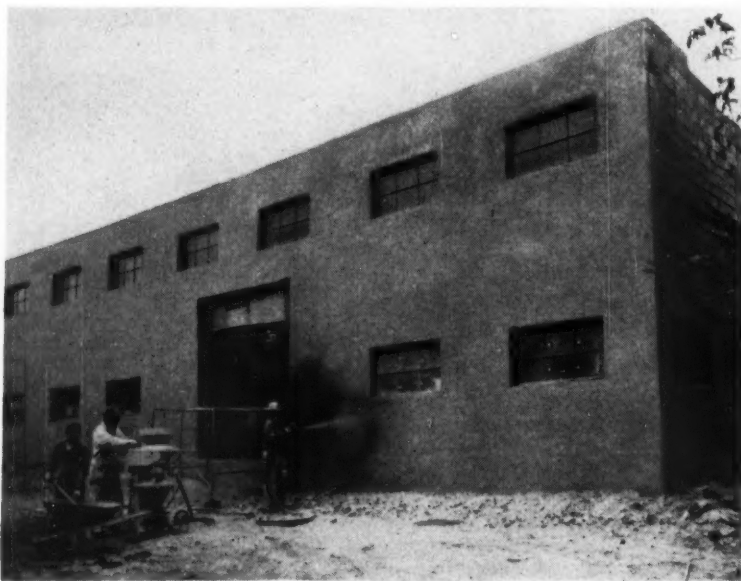
the blocks and serving as thickness guides for the  $\frac{3}{4}$ -in. exterior coat of gunned concrete.

Blocks used were uneven and varied in size. These discrepancies were corrected by running a mortar joint around the periphery of the building every ten courses to maintain a level wall. But Air Placement engineers are confident that mortar joints are unnecessary where first-class blocks are used.

Conventional steel decking and bar joists were used on the standard built-up roof, supported by steel beams in the sidewalls. Shot concrete anchors bar joists and beams into wall sections. Steel window frames are used throughout. Air-placed concrete sealed all gaps between frames and walls, built up sills, made joints watertight.

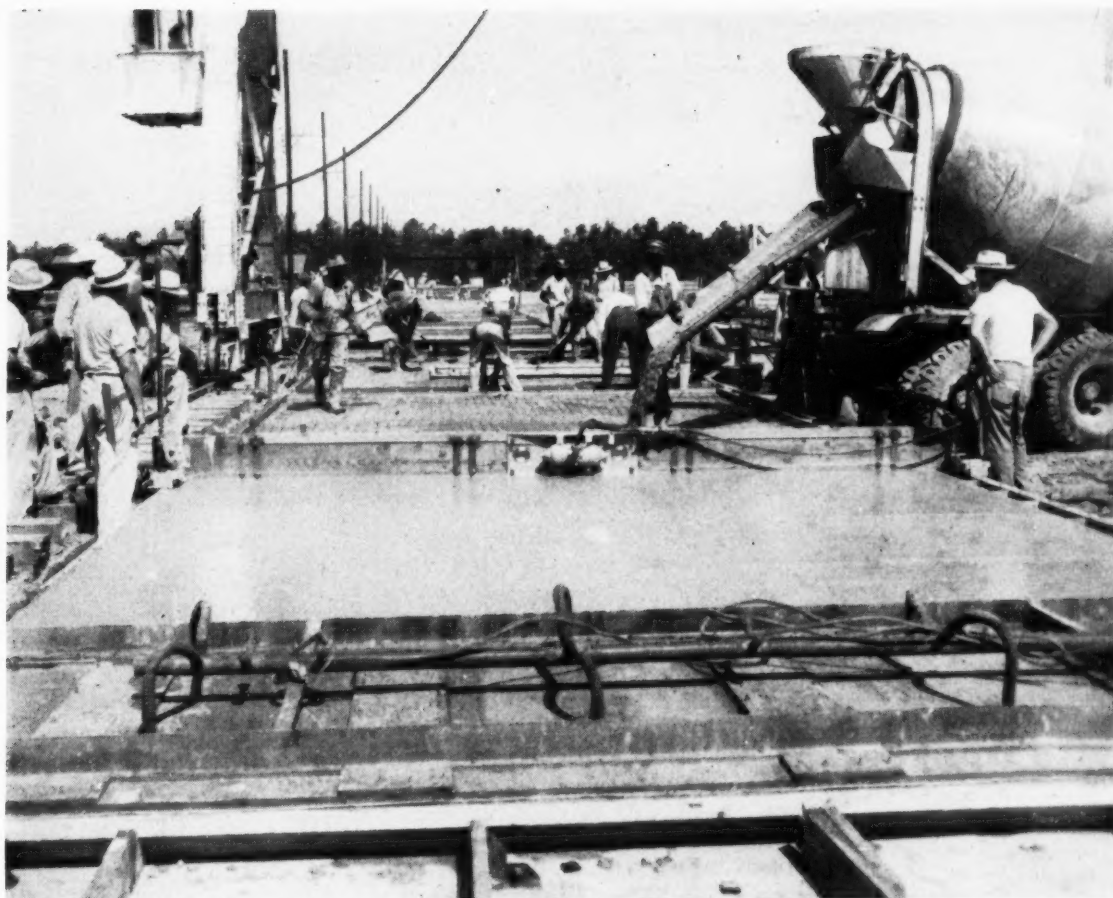
Standard models of Bondactor machines were used to place the concrete. The building measures 80x30 ft and was erected strictly as an experimental structure for the company's own use. It now houses a metal fabricating plant, locker room and some offices.

Many construction methods of applying gunned concrete on dry blocks were tried experimentally as the building was erected. Therefore it has been impossible to arrive at conclusive cost figures. But Air Placement officials learned enough to determine that worth-while savings can accompany this type of construction—both in labor and materials.



**RUGGED, GOOD-LOOKING BUILDING** gets finish coat from a Bondactor air-placement machine. Windows, door frames were sealed by same machine. Note dry wall at upper right.





Casting yard operation is most critical phase of...

## Four-Step Construction of Warehouses

**Prock Construction Co. plans and engineers well in advance, builds one-half of a 200x50-ft warehouse daily. But it takes big equipment, sturdy forms and unitizing of batching, casting, handling and erection.**

By TIP BROWN\*

"PLAN FAR AHEAD and in every detail," is the advice of Benton H. Prock, of the Prock Construction Co., Independence, Mo., when he discusses the construction of 49 large precast concrete storehouses his company completed recently for the Navy.

Under a contract of some \$3,000,000 with the Bureau of Yards and Docks, Prock Construction built 49 ammunition warehouses, each 200 ft 11 in. x 50 ft 5 in. with a 164x12-ft loading dock on one side, at the Naval Ammunition Depot, Shumaker, Ark.

Construction operations divided into four distinct and convenient work phases: Batching of aggregates and cement; casting of frame members, wall and roof panels; handling of finished pieces—into and out of curing yard; erection of structures. Loading docks and floor slabs were poured-in-place.

• **Pieces produced included** reinforced rigid frames, wall panels and roof panels. The rigid frames are in the form of three-section bents, two L-shaped outer legs and a girder-type center section. When

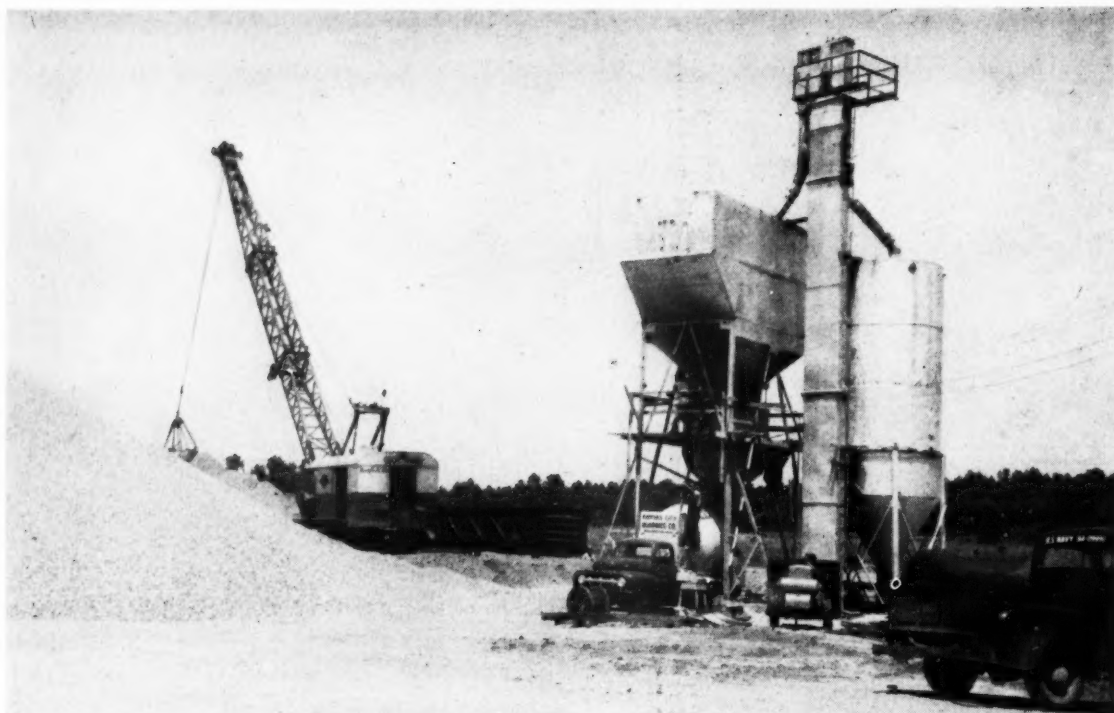
assembled on site, frames were spaced on 20-ft centers and gave inside building clearance 46 ft wide and 14 ft above the floor. Each building required 11 frames.

Wall panels are 19 ft 11 in. wide, 16 ft 8 in. high, 5½ in. thick; weigh approximately 12 tons. Reinforcement is wire mesh through the center of panels. V-grooves along vertical edges were filled with grout after erection. Each building has 26 wall panels.

Roof panels measure 20 ft x 4 ft 6 in., have 8-in. edge ribs and 6-in. transverse ribs. The slab proper is 1¼ in. with waffle-type construction. Each building has 110 roof panels.

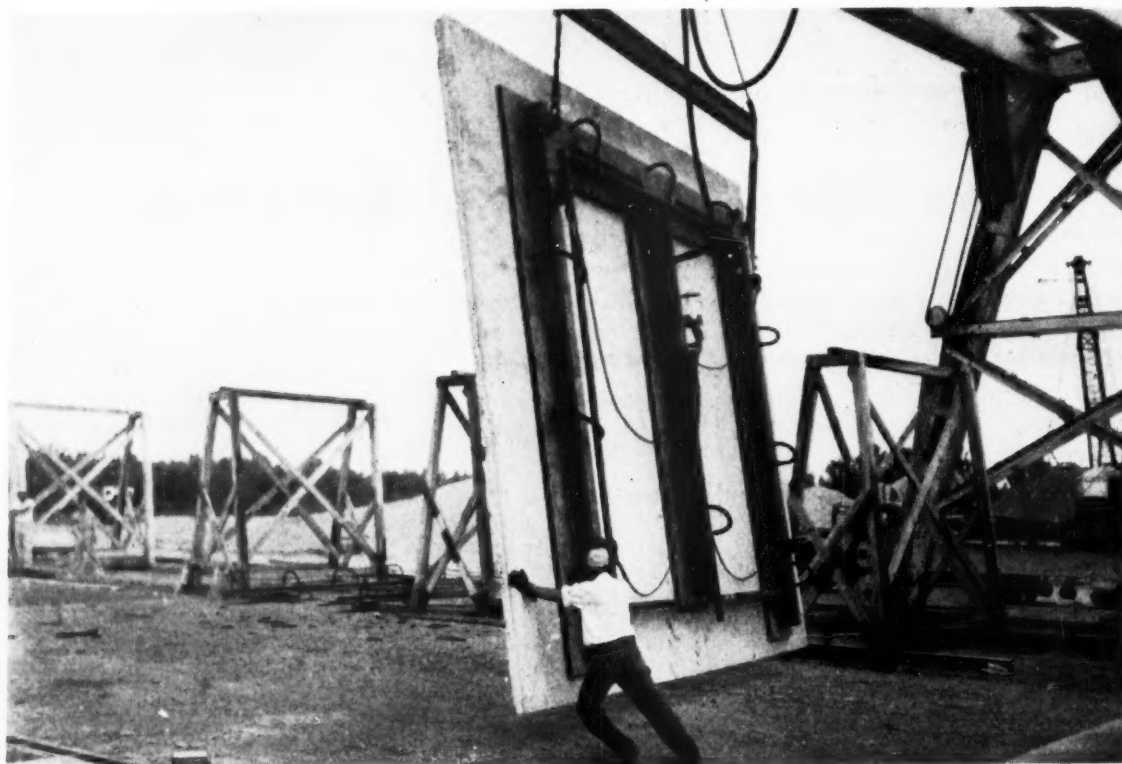
• **Batch plant layout and location**

*\*Some pictures and additional information supplied by the Portland Cement Association.*



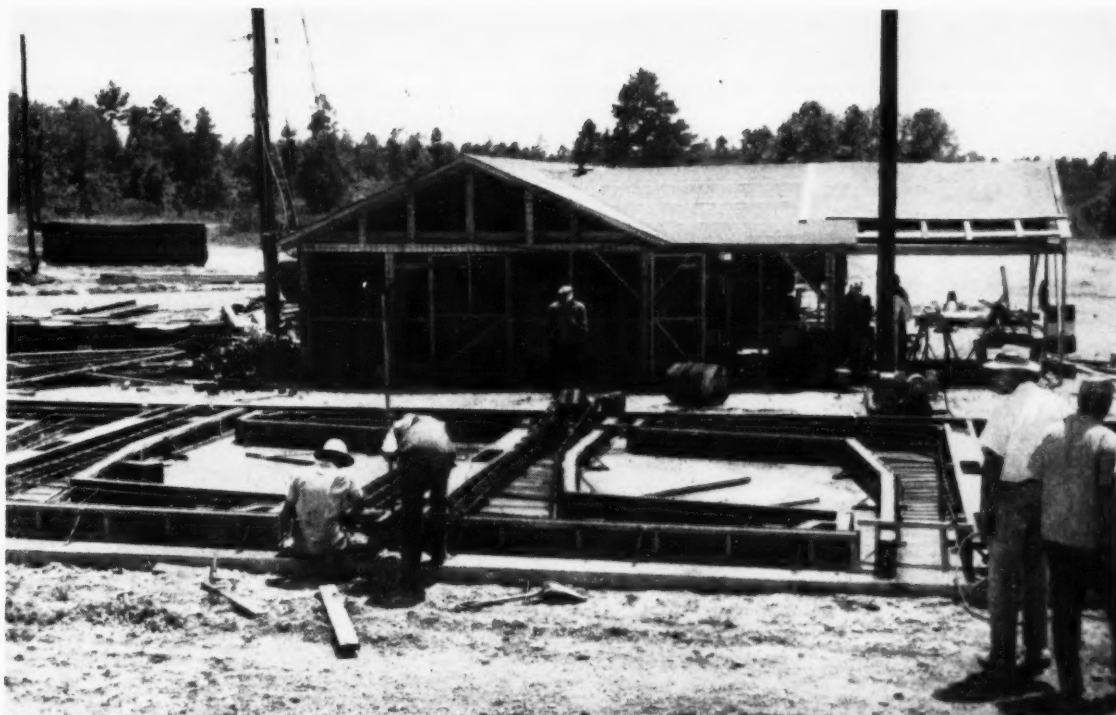
## Batch Plant . . .

Combination of shop-built aggregate and cement bins and Johnson cement-handling and batching equipment pour another 6 yd into Smith transit mixer on Ford chassis. Lima clamshell unloads aggregates from rail cars, keeps bins filled. Plant is adjacent to casting yard.



## Panel Handling . . .

Vacuum lifter pad, consisting of sponge rubber and a plywood base on a steel frame, handled by a 25-ton capacity gantry crane, lifts 12-ton wall panel off casting bed and swings it to A-frames for further curing. Panels were removed within 24 hr after pouring.



## Casting Yard . . .

Reinforcing rods, preformed and tied, are laid into molds, as forms are prepared for another round of pouring for L-shaped legs for the rigid frames. Building in background contains air compressor, vacuum pump and electric generator for operation of gantry crane.



## Frame Erection . . .

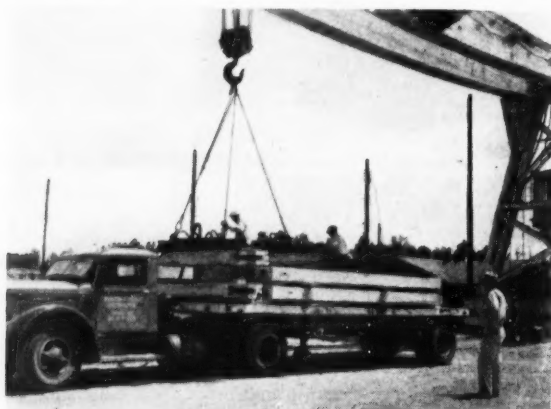
Precast legs of rigid frame are set up by Unit truck crane, held in alignment by adjustable steel pipe braces. Matching center sections lie on ground ready to be set in place and tied to legs by welding and grouting at joints.





FORMS FOR CENTER SECTIONS of the rigid frames were the simplest of all. Concrete curb down center is one side for each

of two forms. Outer forms are sturdy wood and steel design. Reinforcing steel, welding plates and inserts have been set.



L-SHAPED VACUUM LIFTER on gantry loads frame legs aboard Autocar tractor-Fruehauf trailer haul unit for building a mile away. Crane and cable sling unloaded 6,300-lb pieces.



LOAD OF SIX ROOF SLABS is hustled off to a rising warehouse tucked under a Hyster straddle truck. Each panel weighs 3,500 lb. Group is stacked next to building, placed by crane.

were important to ease the storage of aggregates and cement and keep it capable of supplying every demand of the adjacent casting yard. Larger aggregates and about 50% of the sand were produced near the building site. Remainder of the sand was shipped in by rail car.

Cement was brought in by rail, scheduled at one car daily. It was fed to batching operations out of a shop-built 100-bbl bin. An additional homemade bin held 500 bbl in reserve storage. A Johnson cement elevator and screw conveyor handled the material. Other shop-built compartmented bins held aggregates, were loaded from adjacent stock piles with a  $\frac{3}{4}$ -yd Lima clamshell.

The Johnson weigh-batcher, with Howe Weightograph scale, han-

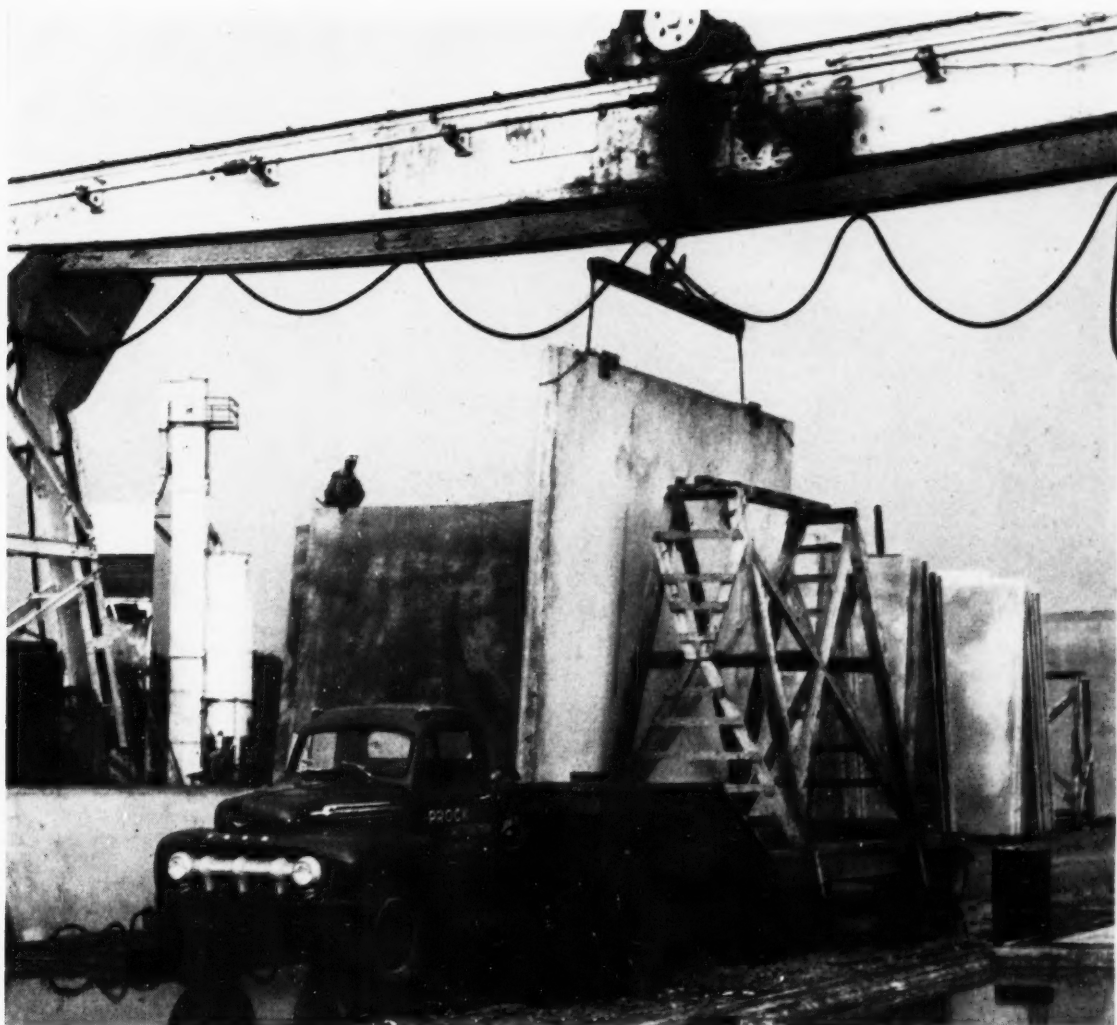
dled a maximum of 100 yd hourly. Three 6-yd Smith transit mixers on Ford trucks delivered concrete to the casting yard and dumped directly into the forms or into a 6-yd bucket used to pour the smaller pieces.

• **Casting yard operations** controlled every other phase of construction at Shumaker. Approximately one-half building was cast each day. This meant scheduling the work so that pouring, removal of partly cured panels and finishing moved along in a steady pattern. The casting yard, 1 mi from the building area, was 850 ft long and was served from end to end by a 25-ton capacity gantry crane 26 ft high and straddling the work with its 77-ft span.

Prock Construction Co. kept a

vigilant eye on forms and inserts since accurate and unhindered erection depended entirely upon getting all component parts to mate immediately when abutted at the building site. Experience showed that forms in a casting yard must be extremely rugged to stand up under repeated use and the continuous shaking imposed by vibrators when pouring concrete. Prock solved the problem of keeping inserts in place by drilling  $\frac{1}{2}$ -in. holes into them and placing  $\frac{1}{2}$ -in. pins into the casting yard deck to hold them exactly in place. The casting bed was concrete, and form sides were made variously of wood, steel and concrete.

Mesh reinforcing went into roof panels and wall panels; bars into the rigid frames. Transit-mix trucks placed concrete directly into



**A-FRAME ON LOW-BOY TRAILER** receives a fully cured wall panel on each side for trip to new building. Gantry crane lifts panels with special cable sling from curing area in the background. Twenty-

four-ton load on the LaCrosse trailer is pulled by an F8 Ford truck with Fabco tandem drive. Note vacuum line looped along top of electric motor-powered gantry crane.

the forms for wall panels. A Jackson Vibratory Screed followed immediately and was followed, in turn, by a vacuum mat to hasten curing so that partially cured panels could be removed to curing racks earlier to make daily pours possible. The vacuum process developed a 24-hr strength of somewhat better than 1,000 psi.

Roof panels and rigid frame members were poured with a 6-yd concrete bucket swung from the gantry crane. Transit-mix trucks kept the bucket supplied.

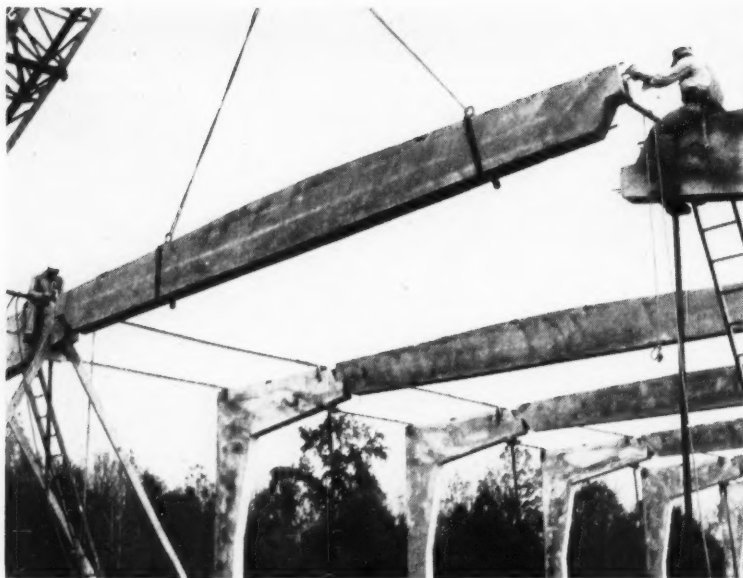
• **Handling of precast components** was accomplished both by vacuum pad and special cable slings. All units were lifted out of their casting-bed molds by specially constructed vacuum pads swung from the gantry crane overhead. They

then were stock-piled adjacent to the casting yard for one week of air curing. When needed for erection, rigid frames were lifted from storage piles and placed on a flat-top truck trailer with the vacuum pad slung from the gantry. On site, a Unit truck crane, with cable sling, set frame members in place.

Wall panels were cured standing on edge against large wood A-frames. They were transported to the building site on a LaCrosse low-boy trailer powered by an F8 Ford truck tractor with Fabco tandem drive. A steel and wood A-frame on the low-boy accommodated two 12-ton panels. The gantry, equipped with a cable sling, loaded cured panels at the casting yard and a 2½-yd Lima crane unloaded the trailer and set panels into place at the buildings.

Roof panels were hauled from the curing yard and stacked at the building sites with a Hyster straddle truck—carrying 6 panels at a time, each weighing 3,500 lb. Loads were picked up by side shoes operated hydraulically from controls handled by the driver. They were placed on the building by crane.

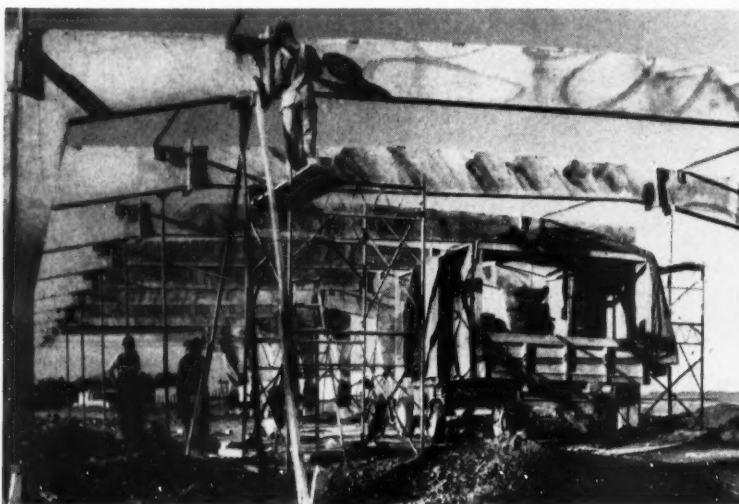
• **Erection of the prefabricated structures** was almost routine, following the great care taken to hold all parts to close tolerances while casting. Reinforced concrete footings, 6 ft square and 3 ft deep, carry each leg of the warehouse framing bents. Legs are hollow at the bottom to receive an anchoring loop of reinforcing steel which is embedded in the footing concrete. Concrete packed into the hollow leg around the anchor loop makes



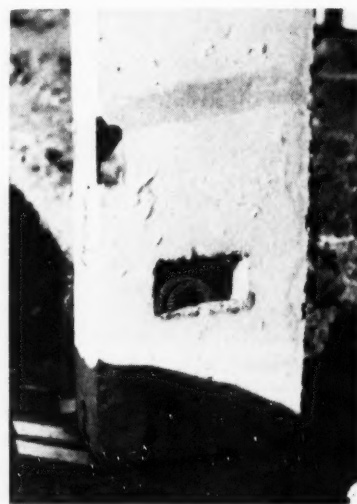
CENTER SECTION of rigid frame is eased into place with a crane. Protruding reinforcing bars of legs and center section meet, are joined by welding. Each side leg of a frame bent weighs 6,300 lb; center sections weigh about 8,300 lb each.



LOOP ANCHOR of bent reinforcing rods will have bottom in 6x6x3-ft footing, loop extending up inside hollow frame leg.



CONCRETING OF JOINTS around the welded reinforcements ties the three parts of each rigid frame bent into an integral unit. Grout was applied under pressure, supplied by equipment on canvas-covered trailer at right which also carried materials.



HOLE IN FRAME LEG shows top of anchor loop inside. Concrete is packed inside through opening, ties leg to footing.

a solid connection. The two legs and center girder were joined by welding the matching reinforcing rod ends and grouting to fill the open joints. Adjustable pipe supports kept frames in alignment until concrete achieved ample strength.

Wall panels rest on the footings poured for the frame legs, each panel spanning between a pair of legs. They are secured by welding matched steel plates. Matching grooves along the vertical edges of wall panels are packed and sealed with grout.

Roof panels, spanning between each of frame legs, were placed quickly with the Lima crane and fastened by welding matching plates cast into panels and frame members. Suitable holes had been left in the panel ribs to hang sprinkler system and electrical ducts.

The concrete floors and loading docks were poured in place following erection. Some end panels of the warehouses were left out to permit passage of transit-mixers.

Benton Prock is a firm believer in precast buildings, but he points out that a casting operation may

take much specialized and large equipment. Also, it takes good planning to cast, cure, haul and erect in profitable sequence.

If the job is planned ahead far enough, workmen know exactly what to do daily after the first few days and both casting and erection can become greatly simplified compared to poured-in-place.

Frank Horn was general superintendent for Prock Construction Co. Commander R. C. Holbrook was resident officer in charge of construction for the Bureau of Yards and Docks.





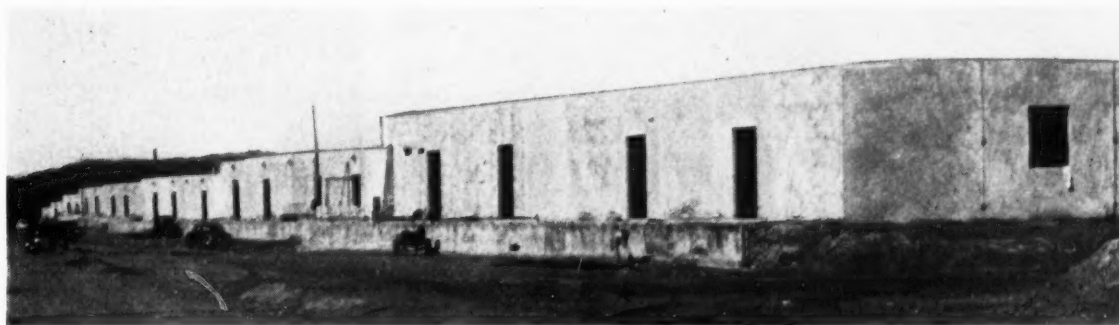
WALL PANEL SECTION, with door opening, is swung into place easily by Lima crawler crane. Note special two-cable sling for handling cured panels with firm support top and bottom.



ROOF PANELS span between framing bents and also are secured by welding matched plates. Openings through center panel are left open to receive continuous type roof ventilator.



PANEL RESTS on a footing at each end. Wood blocks under edge permit removal of sling. Panels are connected to frame legs by welding matched steel plates. Note vertical grouting groove.



ASSEMBLED WAREHOUSES are massive, strictly functional type of structures. They measure 200 ft 11 in. by 50 ft 5 in., have an interior height of 14 ft. Each warehouse has a rail car loading dock 12 ft wide along one side, concrete floor.



PUMPS ON RAFTS attack earthfill dam embankments on both sides, wash fines down to create an impervious core, as they float on the

## Sluicing Pumps Wash Fines Out of Fill...

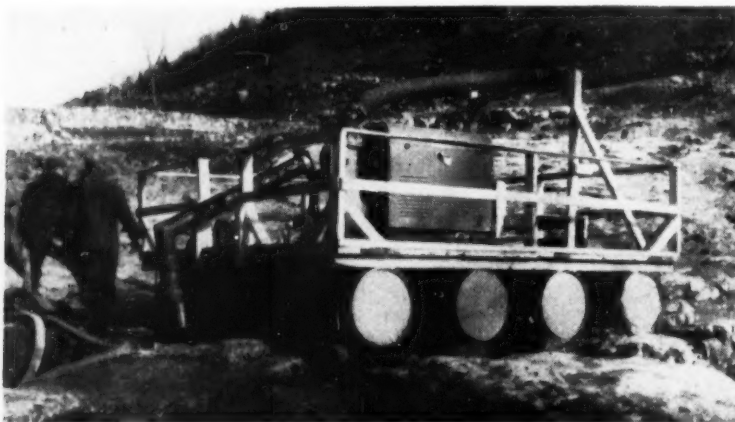
SLUICING PUMPS and haul units combined their efforts effectively to construct a 2,500-ft earthfill dam on a hydroelectric power project on the Shipshaw River in northern Quebec. General contractor for excavating and earthmoving opera-

tions was Mannix, Ltd. G. F. Coates was project engineer.

The dam required 1,300,000 yd of material. Much of it was of a fine nature which was dumped along the outer edges of the dam as it was built up. Ten 6-in. sluicing

pumps washed the fines out of the earth windrows of earth hauled from the borrow pit down into the center of the growing dam to create an impervious core.

As bottom- and end-dump trucks left their loads along both the up-



RAFT OUT OF WATER discloses simple mounting on empty steel drums. Pump is a 6-in. 90M London, powered by a Chrysler industrial engine. Intake line is kept short for greater efficiency, and discharge nozzle can be swiveled to move water stream along a dirt windrow.



COLD WEATHER of northern Quebec did not stop operations. Shelters covered pumps and sluicing down of fines continued, even



core pool on covered rafts. Trucks dump fill along edges of pool, bulldozers push material within reach of the ten sluicing pumps.

## ...Create Impervious Core in Earthfill Dam

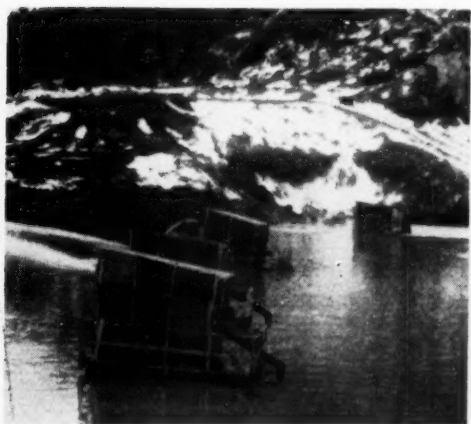
stream and downstream sides, they created two embankments which were kept elevated above the core center at all times so that the fines could be sluiced down into the "core trench" thus created and kept confined within specified limits.

Bulldozers operating on both embankments pushed fill over the sides and within reach of the sluice water streams.

Each pump—London 90M's, powered by Chrysler engines—was mounted on its own floating plat-

form, had an adjustable discharge pipe and took water out of the core pool on which the raft floated. Water jets were directed at the base of the windrow of fine material.

The nature of the core material



with snow on the ground. Water jets were directed at base of windrows of fine material pushed there by Caterpillar D8 tractors.



TOO MUCH SAND came out of the borrow pit at times, had to be dispersed through the core to prevent sand veins. This was done with compressed air from raft in center through jetting lines. Two pump rafts gave stability and propulsion to compressor raft.





CRACKED ROCK in core trench was filled with grout. Euclid bottom-dump rolls across timber crib built across one end to save core trench cleanup when pool reached top elevation.

as it came from the borrow pit sometimes contained a large percentage of sand. To preclude the formation of sand veins through the finished core, one raft carried a compressor which jetted air into the pool to disperse sand among the more desirable fines. Pump rafts were moved and spotted on the core pool by operating the pumps and using reaction from the water nozzles to obtain propulsion. Steering was accomplished by directing the jet nozzle to one side or another.

The completed dam has a crest length of 1,025 ft, is 150 ft high, 870 ft wide at the base and 30 ft wide at the top.



FINES FROM THE PIT are loaded by two Bucyrus-Erie shovels. smaller trucks supplemented a fleet of 33 Euclid end- and bottom-dumps which had their loading line at the left under the larger shovel. Smaller of the two, at right, is loading 5-ton Reo trucks. Ten of the



CORE POOL NARROWS as dam is topped out. Only a few pumps remain to finish the job. Finished dam is only 30 ft wide at the top. Extra material shown here gave working room on the embankment, later was dozed down the slope after hauling stopped.

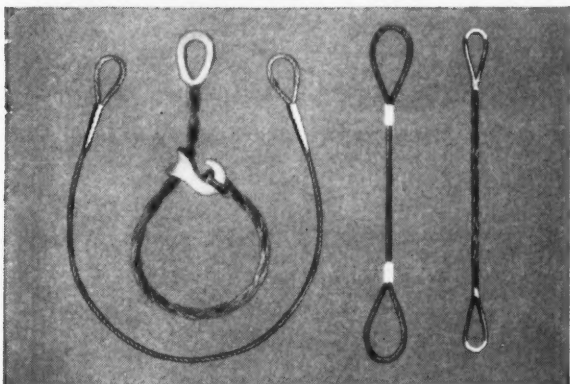


PREFORMED INTERNALLY LUBRICATED

## Wire Rope

for cranes, hoists, elevators,  
and all equipment

From Macwhyte's complete line of a thousand and one sizes and types, you get the right rope for your equipment. Thoroughly lubricated, PREformed, engineered to give long, low-cost service. Send for Catalog G-15.

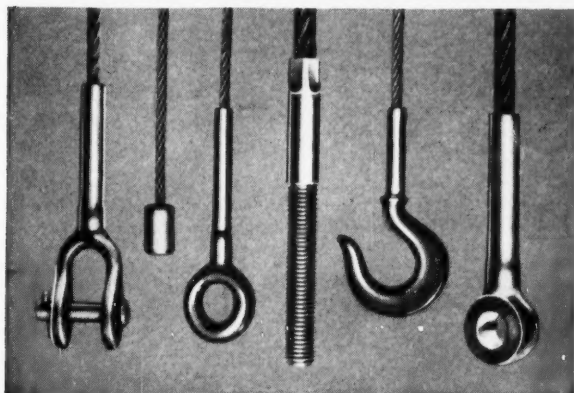


WIRE ROPE

## Slings

for lifting and moving materials,  
equipment in production or maintenance

There are hundreds of types and sizes of Macwhyte Round-Braided, Flat-Braided, Single-Part, and Grommet Slings. All are custom made in length, capacity, and flexibility to meet your needs. Send for Catalog S-8.



WIRE ROPE

## Assemblies

for machine parts, controls,  
and operating devices

Macwhyte Safe-Lock wire rope assemblies are made to order in length, strength, and flexibility desired. Terminals are permanently attached to one or both ends. There are many standard types. Send for Catalog 5201.

# MACWHYTE

These catalogs available on request



### MACWHYTE COMPANY

2941 Fourteenth Avenue • Kenosha, Wisconsin  
Mill depots: New York • Pittsburgh • Chicago  
St. Paul • Fort Worth • Portland  
Seattle • San Francisco • Los Angeles  
Distributors throughout U.S.A.



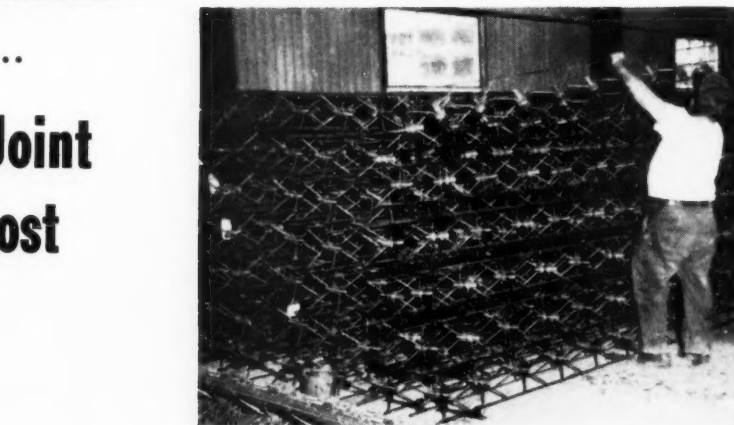
Easily handled by one man...

## Lightweight Joint Cuts Slab Cost

A NEW TYPE of load-transfer unit connects the concrete slab ends on Atlantic City Naval Air Station's new runway extensions. Weighing only 4½ lb per lin ft, the lightweight dowel assembly is designed to take loads that formerly required far heavier joint units.

Chief feature of the new joint is the welded wire supporting frame that carries 1-in. cold rolled steel dowels only 6 in. long, on 1-ft centers. One end of each dowel is threaded to screw into the wire frame. The latter is an integral part of the joint unit, acting as a stress reducing member. It absorbs the traffic load in the delivery end of the slab and transmits it to the short dowels. In the receiving slab, the frame picks up the load from the dowels and re-distributes it. Net result is to reduce deflection and prevent crushing of concrete where the dowels enter the slab ends.

On the Air Station paving, the dowel units go in every 45 ft, with an expansion joint every 225 ft. This latter is identical to the others except for the addition of a ¾-in. asphaltic plank between halves of the supporting frame. Dummy joints 2½ in. deep are formed every 15 ft in the fresh concrete.



**1** JOINT IS ASSEMBLED in job shop from units nested for shipping. It takes only a few minutes to thread dowels into wire frames, slip them together, add bases (top photo), and stack them.



**2** SUBGRADE IS TRIMMED by Blaw-Knox machine in preparation for paving. Base course is 12 in. of compacted bank-run gravel; 6-in. subbase is mixture of crushed stone and gravel at 95% density. Concrete 10-in. slabs total 54,000 sq yd (15,600 cu yd).

The Pleasantville, N. J., firm of Ole Hansen & Sons is putting in some 14,000 lin ft of the new joints (made by Richmond Screw Anchor Co.) on its runway extension job. How joints and concrete are placed, is shown in the photos.

H. J. Hansen is general manager

of the contractor's operations, with Nicholas Gallo as concrete foreman. For the Navy, Cdr. N. H. Twitchell is resident officer in charge of construction, Martin O'Loughlin is supervising inspector, and Don Lippincott is general inspector.

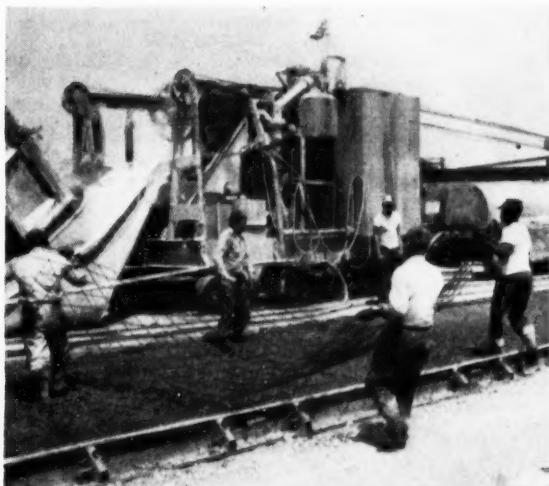




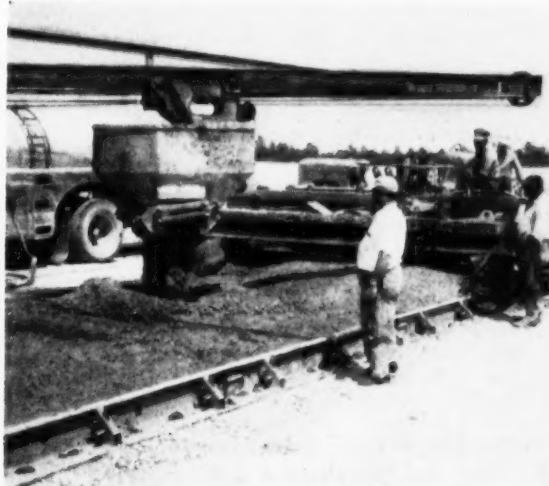
**3** JOINT IS STAKED with two steel pins through each of three base plates. It weighs only 54½ lb in this 12½-ft slab-width length. Where possible, runway is paved in alternate strips.



**4** JOINT IS BURIED initially with bucket load of mix to prevent movement when slab concrete reaches it. Here, some of it slops over Blaw-Knox road forms, which are handled by hand.



**5** REINFORCING IS PLACED after first (7-in.) lift of concrete is spread. Supplied in 12x15½-ft mats, 6x12-in. mesh of No. 1 and No. 2 wires is lapped 20 in., totals 60,000 sq yd on job.



**6** CONCRETE IS DUMPED for final (3-in.) lift of Class G-2 mix with 1- to 2-in. slump. Materials are hauled 2 mi from Blaw-Knox 2-yd batch plant and mixed in 34-E dual Ransome paver.



**7** SLAB IS WORKED OVER by Blaw-Knox spreader and finisher. Dummy-jointing, wood floating, brooming and spray curing will complete it. Hansen's \$1,370,000 contract also includes 130,000 sq yd of 3-in. bituminous paving on 6-in. penetrated base course.



**8** EXPANSION JOINT IS SET at 225-ft intervals. Average straight run of paving is only 450 ft, slowing progress somewhat.

# COMMENT

## from the BUTLER ENGINEER

### Leis to Permafrost . . . and Super-Super Markets

You can think of Butler Bin whenever you cross the Hudson River on the new Nyack-Tarrytown Bridge. It will be the big link on the New York Thruway that connects Leon and Eddie's, the Stork Club and the Copa with Mr. and Mrs. America—and others less jelled matrimonially.

The piers for the bridge are poured by a huge dual central Mixing Plant—engineered and built by Butler. The Plant is a towering and busy edifice floating on a scow and it undoubtedly mystifies 99% of the shoreline superintendents. They probably figure it's some sort of secret weapon.

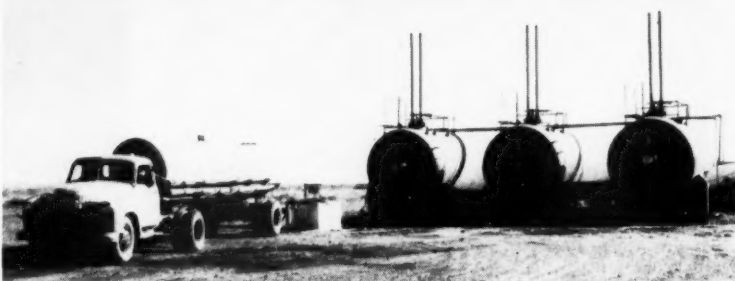
*By the way, there's enormous activity in big Ready Mixed Plants this year. I'm busy engineering more Plants with 6 yard mixers than there are already functioning in the entire country.*

Remarkable how many different problems we've at Butler Bin must study. The prospective 49th and 50th States, for example. I have to jump from leis to permafrost in designing Plants for Hawaii and Alaska. We've just completed a Paul Bunyan-like Plant for a "super-supermarket" operation to supply all sorts of concrete masonry products, concrete pipe, central mixed concrete—yes, even asphalt. Hollywood couldn't describe the gigantic aggregate handling system. Strictly modern. It conveys from great stock-piles of a weird variety of materials to the various plant components. Highly complex—but it all hums along smoothly as my wife's sewing machine.

*Gotta 6 yard mixer in your attic which you'd like a plant built around?*

*The Butler Engineer*

BUTLER BIN COMPANY  
WAUKESHA, WISCONSIN



LIQUEFIED PETROLEUM GAS is getting a workout at Garrison Dam in North Dakota, where it fuels the 325-hp Hall-Scott engines in more than sixty 25-yd Euclid wagons. Tank truck (top) refills Euclids' tanks with butane-propane mixture at end of every 10-hr shift. Two such tankers, each with two-man crew, can refuel all 60-odd units in less than 1 hr. Job storage facilities (bottom) were set up by dambuilding contractors—a joint venture of Peter Kiewit Sons' Co. and Morrison-Knudsen Co.

## LPG as Construction Machinery Fuel

By MARK H. COONS

Field Engineer, LeTourneau-Westinghouse Co.

IN THE LAST FEW YEARS liquefied petroleum gas—or LPG—has been used as a direct motor fuel in large earthmoving and hauling equipment. It has invaded a field which most people consider the exclusive realm of diesel engines. Because of this increased use, it would be smart to take a quick look at LPG to see what it is and how it compares with diesel fuel.

Liquefied petroleum gas is a hydrocarbon mixture which is gaseous under normal temperatures and pressures, but which is kept liquid under pressure for efficient transportation and storage. Propane gas, butane gas, or a mixture of the two, are the usual hydrocarbons that make up LP gas. At atmospheric pressure, propane has a boiling point of  $-44^{\circ}\text{F}$ , while butane has a boiling point of  $+31^{\circ}\text{F}$ .

Because of this difference in boiling points, LPG used in cold weather operations consists primarily of propane. This allows the mixture to gasify upon release of pressure. In warm weather, however, it is convenient to use a large proportion of butane in the mixture because of the difference in vapor pressure. At  $70^{\circ}\text{F}$ , butane has a vapor pressure of about 31-psi gage, while propane has a vapor pressure of about 120-psi gage. Naturally, the lower pressures make for easier fuel handling.

One method of fuel comparison is the Btu content per gal, as these units of heat are a partial measure of the power contained in a gallon of fuel. Diesel fuel contains about 136,000 Btu per gal, whereas butane contains about 103,000 and

(Continued on page 70)



**"We're sold on Caterpillar equipment.  
We have never found anything better!"**

**W. Galbraith, Superintendent, C. L. Hubner Co., Denver, Colorado**

Performance is Mr. Galbraith's yardstick. Superintendent of Hubner's portable rock-crushing plant near Stratton, Nebraska, he knows from experience that Caterpillar equipment pays off. On this job, a D17000 Engine powers a Pioneer crusher—a D13000, the Lima 1½-yard shovel. A D6 Tractor with No. 6S Bulldozer also contributes to profitable production.

The plant has a capacity of from 300 to 400 tons per hour. The shovel works 8-10 hours a day, 25 days a month, all year round. The crusher has a 10-hour daily schedule, 25 days a month, 8 months a year. At the time this picture was taken, its D17000 had been working 13,365 hours. That's good, but not unusual—many Cat\* Diesels are still going strong after 80,000 hours.

Long life is just one of many reasons it pays you to standardize on big yellow units. Built for trouble-free operation, they use low-cost No. 2 furnace oil *without fouling*. Complete engine sealing, along with fuel and oil filters, keeps them working with a minimum of down

time under the dustiest conditions. If they need fixing, your call brings fast, on-the-spot service from your Caterpillar Dealer—one source for *all* service!

Next time you order replacement power or new machinery, specify Cat power. More than 150 manufacturers can supply these durable engines in their equipment. For proof of performance, see your dealer. Ask him to *show* you how they can cut your costs and increase your profits!

Caterpillar Tractor Co., Peoria, Illinois.

**CATERPILLAR\***

\*Both Cat and Caterpillar are registered trademarks. ®

**SPECIFY CAT POWER  
FOR HIGH-PROFIT  
PRODUCTION**



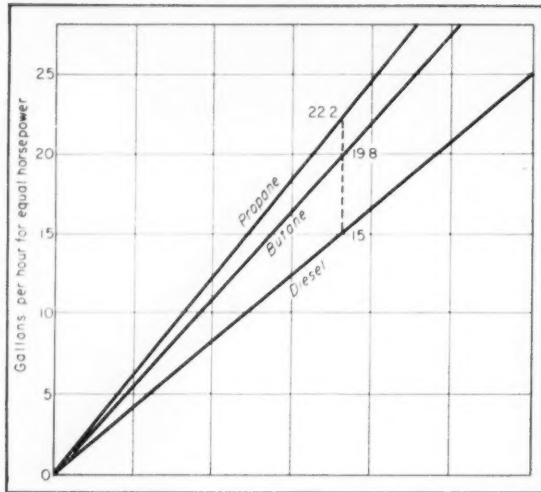


FIG I . . . APPROXIMATE FUEL CONSUMPTION in gallons per hr for equal horsepower output, based on Btu content only.

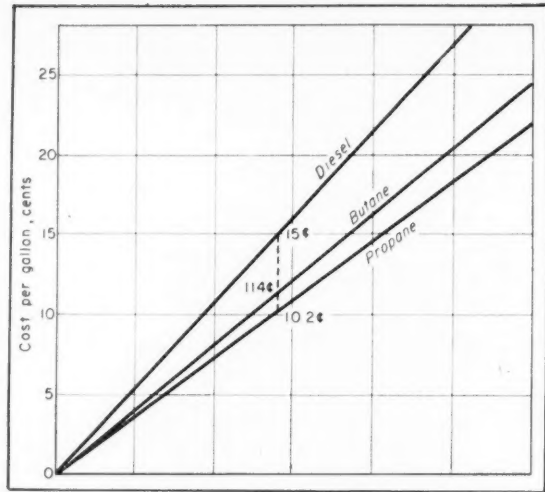


FIG II . . . COMPARISON OF PRICE per gal for equal hourly fuel costs at equal horsepower, based on Btu content only.

propane about 92,000. From this it can be seen that diesel fuel has potentially more power per gal than the others. Thus, strictly on the Btu basis, it would appear that fuel consumption per hr for LP gas will be higher than for diesel fuel, for equal horsepower output.

Fig I compares fuel consumption (on the basis of Btu content only) of diesel fuel and propane and butane, for equal horsepower output. Any vertical line on the chart will show the spread between the fuels. For example, an engine using 15 gal per hr of diesel fuel would use

19.8 gal of butane or 22.2 gal of propane compared on a Btu basis. A mixture of the two gases would fall proportionately between the two lines. In actual practice, the spread between diesel fuel consumption and LP gas consumption

(Continued on page 72)

# YOU CAN ... TAKE IT WITH YOU

**IT'S PORTABLE!**

Easily transported from job to job and set up for use in minutes.

**Capacities:**  
20, 25 & 30 Ton

**Platform Lengths:**  
18, 22, 24 and 30 ft.

**REMOVABLE SIDE ARMS**

The assembled scale can be moved by merely removing six bolts which hold the side levers in place. The complete scale can then be lifted as a unit and loaded onto a truck. Once positioned, it can be ready for use in minutes.

**ACCURATE** Perfectly balanced for lifetime accuracy. Wide steel bases, at both ends, support scale therefore require no concrete footing. Easy to read weighbeam is chrome-plated. Other vital parts are electro-plated against corrosion.

THE  
**THURMAN  
PORTABLE  
TRUCK SCALE**

Est  
1918

**THURMAN MACHINE CO.** SCALE DIVISION

156 North Fifth Street  
Columbus, Ohio

Dept.  
F

Before you buy any truck... Make the  
**15-second SIT DOWN TEST**  
 in **FORD'S** new Driverized Cab



*Step into* the world's most comfortable truck cab!  
 It's new! It's **DRIVERIZED!** Only **FORD** has it!

It's a truck driver's dream come true! You'll know it too, in just the 15 seconds it takes you to . . . *swing open* the new wider doors... *slide* into the 3-man comfort seat with exclusive shock-snubber . . . *sweep* your eyes across the one-piece windshield and back to the 4 ft. wide rear window . . . *stretch* out in big cab roominess... *sigh* a sigh of solid comfort. Man! What a treat for a working guy!

The completely new Ford Trucks offer many great advancements in easier driving and time-saving delivery, all at the same low price.

They offer new power for sustained speed travel—new Synchro-Silent transmissions for faster, easier shifting—new set-back front axles for sharper turning—new features throughout to help *get jobs done fast*.

Choose the one right truck for your work from over 190 completely new Ford Truck models.

And before you buy any truck, make the *15-second SIT DOWN TEST*. It will open your eyes to comfort you never thought possible in a truck. See your Ford Dealer today!

**FORD ECONOMY TRUCKS**  
 SAVE TIME! SAVE MONEY! LAST LONGER!



## SYMONS SHORES FIRST CHOICE

because . . .

★ **LIGHTER**

10 to 15 lbs.

★ **SAFER**

Have greater load capacity

★ **FASTER**

Work like hydraulic

★ **COMPLETE**

Scab, Tee-head, and Extension allow for every type of use

Try these shores on your next job. See for yourself . . . you'll be convinced that Symons Shores are **FIRST CHOICE** because of the savings they will mean to you in time and money.

### Symons Column Clamps Save Money on Every Job



★ **SIMPLE CONSTRUCTION**

Only two units—both alike, no loose parts

★ **SIMPLE TO APPLY**

Require only a hammer, and are completely adjustable

★ **SQUARE COLUMNS**

Automatically and accurately

These simple compact units put tidy savings in your pocket. Their function is clear—to do a good job, at a low cost, with complete accuracy. That's precisely what they do.

#### RENTED WITH PURCHASE OPTION

Symons Shores, Column Clamps and Forms can be rented with purchase option. Paid rentals apply on purchase price.



**SYMONS CLAMP & MFG. CO. Dept. H-3**  
4255 West Diversey Ave., Chicago 39, Ill.

Please send information on items checked.

- ☐ Column Clamps    ☐ Bar Ties and Tie Chairs  
☐ Shores            ☐ Forms

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

#### LPG FUEL . . . Cont. from p. 70

is not quite as great as the chart shows. The efficiency of combustion of the two fuels must also be compared.

The efficiency of any combustion process is dependent upon the degree to which the fuel is vaporized and mixed with air in the correct proportion. In an LPG system, the liquid is depressurized and filtered before entering the carburetor as a dry gas. Here it is mixed with the proper amount of air, and the mixture is carried to the engine cylinders through the manifold. With such a system it can be seen that the fuel must be completely vaporized, that it will be mixed accurately and thoroughly with the air, and that all cylinders will receive the same fuel-air mixture. As a result the fuel will be burned more completely. With liquid fuels none of these features is accomplished so efficiently or easily as with LP gas.

#### Diesels Need Injectors

In diesel engines, the fuel distribution is dependent entirely upon the accuracy of the fuel injector—a separate one for each cylinder. Although most fuel injector systems operate at a fairly high rate of efficiency, complete vaporization of the fuel and good fuel-air mixing are difficult to obtain. On each cycle of a diesel, a full charge of air is admitted. The amount of fuel added is then dependent upon throttle position. Combustion can be expected to be complete only so long as there is an excess of air. This is due to the necessity of changing diesel fuel from liquid to gas by extreme heat, which is difficult for a high-boiling-point fuel. As the throttle is increased, the excess of air is decreased. Thus it is obvious that, at times, part of the fuel will be either partially or completely unburned, with a resultant loss of combustion efficiency. Indicative of this is the presence of carbon in the exhaust, and unburned fuel in the crank case. By comparison, the exhaust of LPG engines is clean, and little or no dilution occurs in the crankcase.

Actual comparisons of fuel consumption between LPG engines and diesels have been few. But it appears that the former consume from 15 % to 30% more gallons of fuel (depending upon the butane-propane content) than will a diesel to pull the same loads.

In the U.S., LP gas was originally  
(Continued on page 74)

# SYMONS 4 Point PLAN

## FOR LOW-COST CONCRETE WALL CONSTRUCTION

The Forming System, Engineering Service, Sales Service and Rental-Purchase Plan which make up the Symons 4-Point Plan are ready to go to work for you—regardless of the complexity or size of the application.

### 1 SYMONS FORMING SYSTEM

. . . includes strong, long-lasting panels that can be easily assembled to form walls of any height or shape; sturdy hardware and ties especially designed to speed erection and stripping. The combination insures a fine job completed in a surprisingly short time with real savings in labor and material costs.

### 2 SYMONS ENGINEERING SERVICE

. . . is set up to furnish you complete form layouts and job cost sheets on your form work. There is no charge for this service. You just send your plans, we do the rest. You'll be pleased with the clear picture of your job (its costs, bill of materials, and labor saving methods) that the Symons Engineering Service provides.

### 3 SYMONS SALES SERVICE

. . . means regular on-the-job service. Symons salesmen are always available to make on-the-job recommendations of the forms and hardware needed and to see to it that materials arrive when promised. To further simplify construction, Symons salesmen will assist in the supervision of form erection to assure correct and fast set-up. Another feature of the Symons no charge service plan.

### 4 RENTAL-PURCHASE PLAN

. . . offers you the opportunity to use the Symons Forming System on a rental basis. Then, if you want to purchase the forms, the rental charge will apply on the purchase price.

Contractors throughout the country have tried the Symons 4-Point Plan and like it. Send in your request for the complete facts—no charge or obligation.



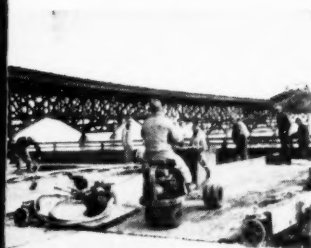
**SYMONS CLAMP & MFG. CO. Dept. H-3**  
4255 DIVERSEY AVENUE • CHICAGO 39, ILLINOIS



# "Whiteman POWER BUGGIES are doing a TREMENDOUS JOB

ON THE N.J. TURNPIKE!"

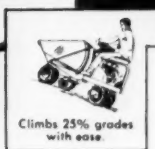
writes Larry O'Neill, Supt.  
c/o Poirier & McLane Corp.



Whiteman Power Buggy on bridge section of New Jersey Turnpike.



Work on New Jersey Turnpike is speeded by Whiteman Power Buggies.



Climbs 25% grades with ease.



Positive "in-gear" mechanism of dump and return.



Also available with dumping stake-type body.

"Our Whiteman Power Buggies are tireless workers. All day long they speed along the runways, climb steep grades, squeeze through tight spots and turn on a dime. They're doing a tremendous job, saving valuable time and cutting costs—for the simple reason they carry 13 cu. ft. of concrete at a time, which is equal to 4 hand buggies. For bridge slabs and floors, they are tops."

Larry O'Neill, Supt.  
c/o Poirier & McLane Corp.



# Whiteman



**THE LEADER IN CONCRETE EQUIPMENT**

**POWER BUGGY • FLOATING & FINISHING MACHINES • SCREEDING MACHINES**

**WHITEMAN MFG. CO., DEPT. C**  
3249 Cositas Ave., Los Angeles 39, Calif.  
Please send prices, literature and name of distributor for \_\_\_\_\_ Power Buggy \_\_\_\_\_ Screeding Machines \_\_\_\_\_ Floating Finishing Machines.

Name \_\_\_\_\_  
Firm \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## LPG FUEL . . . Continued from page 72

obtained from natural gas, and the process was incidental to the latter's production. Although large quantities of LPG are still obtained this way, it is no longer the principal source. In recent years oil refineries have been producing large quantities of LP gas as a byproduct. With the greater market for this fuel, special equipment has been installed in many refineries to increase its production.

The availability of LP gas varies with each area and each producer. Thus, while propane is plentiful in the Southwest, the situation in the case of a number of Eastern refin-

eries is that there is no excess of LPG for automotive use—the supply being committed to the more profitable industrial utility and bottled gas markets. In most cases the availability of LP gas is largely a matter of price, and recovery and availability of LP gas by refineries can be increased considerably if the price is sufficient.

LP gas—and particularly propane, of late—has enjoyed a substantial price differential at the refinery as compared to diesel fuel, selling for 2c to 5c a gal. The delivered price of LPG, however, varies widely throughout the coun-

try, compared to rather stable delivered prices for diesel fuel. Delivered prices of LP gas are at a minimum in the Southwest, the area of the producing fields and major sources of supply. They are highest in the Northeast due to transportation cost.

Because LP gas is handled and stored in liquid state under pressure, these costs will be higher than for diesel fuel. Facilities for storing the fuel have been estimated to cost \$.60 to \$1.00 per gal of capacity. If used in sufficient quantities, cost for handling and storage will run from ½ to 1½c per gal, depending on the size of the facilities and the quantity handled. Storing, handling and delivery of LP gas is done by bulk plants throughout the country. However, as LP gas is expensive to handle and deliver in small quantities, price per gallon to a user of limited amounts can be expensive, unless he can obtain the fuel close to its source of supply. A large user (10,000 to 15,000 gal a month, or more) in most cases can reduce the retail cost by purchasing the fuel in tank-car lots for the refinery, and handling the storage facilities himself.

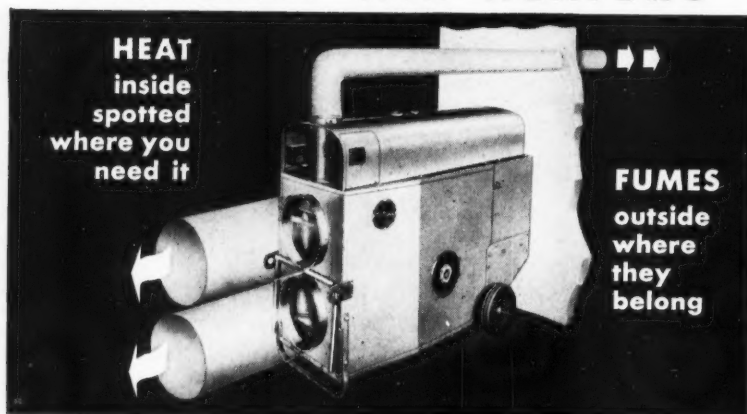
### Remember the Taxes

LP gas, unlike diesel fuel, is also taxed in some states as a motor fuel and also bears a Federal tax of 1½c per gal. This must be considered in arriving at a final cost. In some areas, the final cost of LP gas still enjoys a good price differential. In others, of course, it will equal or exceed diesel fuel cost. In any case, the price relationship between the two fuels is not constant, and observers in the petroleum industry are of the opinion that LP gas will become more competitive price-wise in the future.

To get a rough check on comparable fuel costs, Fig. 11 (p. 70) has been constructed. This chart is again based on the Btu contents of the fuels, but can serve the purpose of estimating the critical price of LP gas at a given installation. For example, where diesel fuel costs 15c a gal, LP gas should have a total price of between 10.2c and 11.4c (depending upon the butane-propane content) to provide equal hourly fuel costs for the same job.

Cost comparison between the two fuels should also include a comparison of engine maintenance expense. The maintenance comparison, like the fuel comparison, is also uncertain. It is rendered more confusing by the greater complexity involved in maintenance opera-

## SAFE HERMAN NELSON PORTABLE AIR HEATERS



Portable heat can make money for you this winter—keep men on the job and materials at safe working temperatures. And Herman Nelson Heaters, with flexible ducts, put all the heat exactly where you want it with minimum waste. Heat can be "piped" under tarps, into bins and cargo spaces, direct to working areas.

Herman Nelson portable heat is absolutely safe. The heated air is completely free of combustion gases—no carbon monoxide, no smoke, no sparks. All products of combustion

are kept separate and vented off as in a modern home furnace. You get all the heat you want, where you want it, with none of the dangers of salamander-type units. Act now. Your investment will be repaid in just one winter, this winter!

Remember, Herman Nelson has the only complete line of completely safe Portable Air Heaters.

**HERMAN NELSON**  
PORTABLE AIR HEATERS  
Another Product of American Air Filter Company, Inc.  
Moline, Illinois



Get all the FACTS  
about ALL  
Portable  
Heaters

American Air Filter Company, Inc.  
Dept. 11, Moline, Illinois

Please rush my free copy of booklet "Guide to the Selection and Use of Portable Space Heaters."

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
TYPE OF BUSINESS \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

tions and analysis, and the lesser accuracy of maintenance costs.

The effect of fuel on engine wear is largely a function of the completeness of combustion. Fuel leaving carbon or partially burned fuel due to incomplete combustion will cause contamination of the crank case oil and increased engine wear. Due to the volatile nature of LP gas, more complete combustion is likely as compared to diesel fuel. This means longer periods between oil and filter changes, and fewer engine overhauls.

#### Maintenance Reduced

On one of the largest earthmoving projects in recent years, there was a large fleet of trucks burning LP gas and a large number of crawler tractors equipped with diesel engines. The same heavy-duty oil was used in all engines. On the basis of a used-oil analysis conducted by an independent laboratory, oil changes were made at 500 hr in the LPG engines, compared with 60 hr in the diesels. Engine overhauls on the diesels were made twice as often as on the others. While this may not necessarily be a typical example, or entirely attributable to difference in fuel only, it is indicative that maintenance costs can be reduced somewhat using LPG engines.

Although LP gas as a fuel has found but few applications so far in earthmoving equipment, it is making rapid strides in farm tractors and fleet owners of highway trucks, buses, and taxicabs. At the present time the cost of handling and distribution in many sections of the country does not make it economically feasible for LPG to replace diesel fuel. However, large fleet owners close to the source of supply and with large permanent installations have been successful in replacing diesel engines, and any further spread in fob prices will undoubtedly find more equipment owners making the switch.

**U. S.  
DEFENSE  
BONDS**

**NOW EVEN BETTER**

## MORE CONTRACTORS BUY MARLOWS

### FIRST CHOICE...

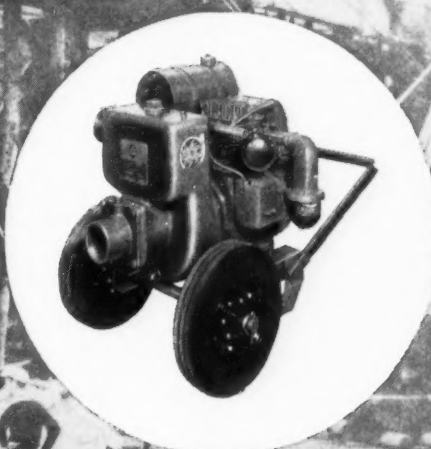
of contractors by a wide margin, are Marlow pumps... built to meet the tough and exacting requirements of the job.

Marlows' have the features that contractors demand.

- *Simplicity of construction, with a minimum of parts, for better operation, lower maintenance and longer life.*
- *Faster, and more dependable priming even at high suction lifts.*
- *Ability to handle trash without clogging or losing prime.*
- *High efficiency and low fuel cost.*

All contractors' pumping needs are more dependably handled with just two types of Marlows — Marlow Self-Priming Centrifugals for high capacity pumping — Marlow Mud Hogs for muddy, sandy and trash laden water.

Buy Marlow and get the best in pumping performance. For complete information see your Marlow dealer or write for "Marlow Contractors Pumps" bulletin C-52.



Marlow manufactures the world's largest line of contractors' pumps.

313

**MARLOW PUMPS**

Other factories in France and England.

RIDGEWOOD, NEW JERSEY

Branch Plants: DeQueen, Arkansas  
West Chicago, Illinois

Distributors and Dealers everywhere.



(Advertisement)

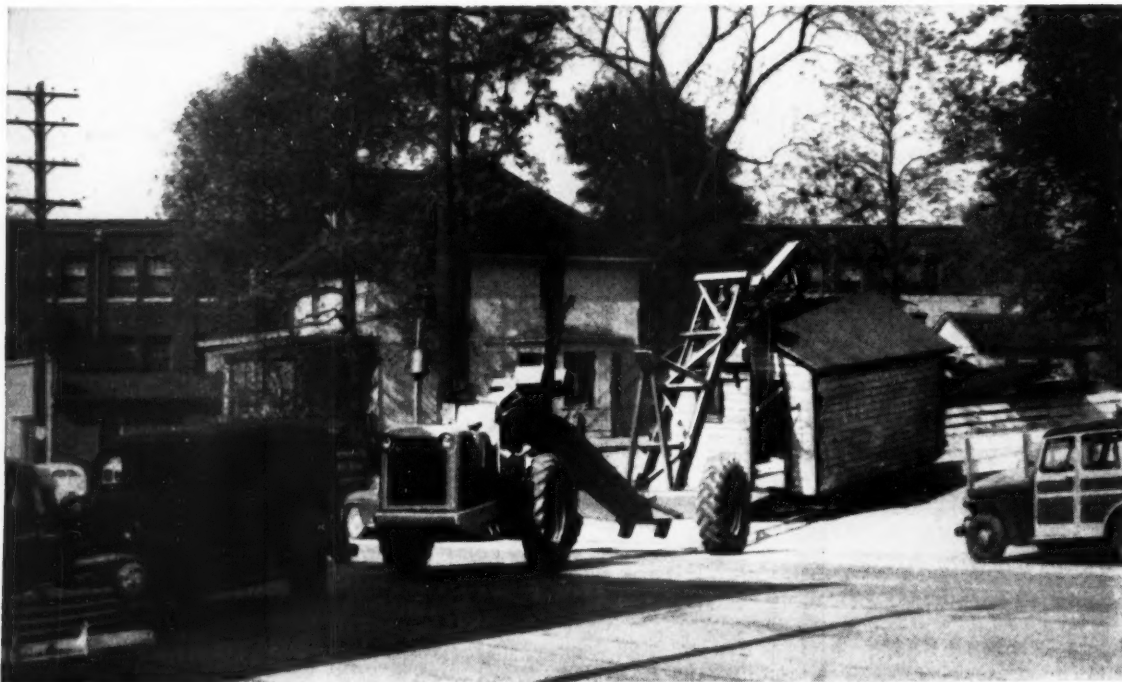
## LeTourneau pictures of the month . . .



**"TURNS MOST ANYWHERE"** — J. R. Dunn Lumber Co, Baxley, Ga. push-loads D Tournapull with  $5\frac{1}{2}$  yds of sandy clay, completes a typical 2.4 mi cycle every  $8\frac{2}{3}$  min. Says Operator Willie Lee, a skinner since 1945, "I like Tournapulls better than any crawler and pan. They do better work, have more power, turn most anywhere." "D" turns around non-stop on a fill only 25'4" wide.



**9 TONS, NO SPILL** — This 9-ton rig, one of two belonging to Everett & Clark, Plattsburg, Missouri, hauls 800 yds of shot rock and dirt per 8-hr day from pit to crusher. Material is used to make concrete building blocks. Big 7 x 11-ft target and low rear-entry speed shovel-loading of D Tournarocker . . . reduce spillage.



**LIFTS, CARRIES LOAD OVER HWY** — By retracting boom electrically to prevent sway, this Illinois operator carries crane loads safely through city traffic with D Tournacran.

crane. Moving this garage was a short, fast job. With rope attached to building, crane picked it up and drove away. Tournacran needs no outriggers, has stability to carry capacity loads

# Scrapers dig 25'-deep sewer trench

## Contractor reports 2 D Tournapulls save \$149,000 over dragline method

When Arlington County, Virginia, announced a 7000'-long, 130,000-yd. sewer excavation project recently, one of the bidders was M. J. Bles Construction Co. of nearby McLean. Although "obviously a dragline job", according to other contractors, Mr. Bles decided to tackle the work with his 2 D Tournapulls. Confident the "D's" could greatly outproduce slower, more expensive equipment, Contractor Bles underbid the other firms by \$149,000. Here's how he figured:

1. The 2 fast-hauling Tournapulls, with a lower hourly operating cost, could dig the 25'-deep trench for 96" pipe cheaper and faster than a big dragline. (Job records later showed that it would have taken a 5-yd. dragline to produce as much as the "D's", and that costs would have been far higher.)

2. Excavated material, spread in thin layers by Tournapulls, would dry quicker than piles heaped by a dragline or trencher. Also, Tournapulls could easily re-

claim and spread the dried muck, sand and gravel as back-fill without aid of auxiliary equipment.

3. Because Tournapulls operate in the trench, and could dump at convenient locations some distance from cut, weight on sidewalls of trench would be minimized. Consequently, *no sheathing* of walls would be required to prevent cave-ins. Thus, a major cost factor would be eliminated . . . time and materials saved.

Winning the bid, Contractor Bles faced the acid test—could his Tournapulls really fulfill these 3 points? Here's what he found:

### Moves 1,080 yds. per day

Push-loaded by a 101 h.p. tractor, Tournapulls consistently dug 5½ pay yds. of mixed muck, sand, and gravel in 30 to 45 seconds. As planned, rigs hauled out of the trench without assistance, spreading material in thin layers some distance from trench. No cave-ins occurred. No trimming or shoring was needed on the 1-to-1 side slopes. Entire 130,000-yd. project—including back-filling of the 96" reinforced concrete pipe—was completed by the 2 "D's" in 120 days. Costs were well within the margin allowed. Profits were "even higher than expected."

Depth of cut is now about 15'. Another 10' of material will be removed before pipe is laid. As Tournapulls dig trench, pipe-laying crews go to work. Daily dirtmoving output was limited so excavating wouldn't get too far ahead of pipe-laying.



Tournapull—Trademark Reg. U.S. Pat. Off. DP-300-A-b

Whenever *you* have dirt to move on *any* type job, it will pay you to check the output of the versatile 28 m.p.h. D Tournapull. It self-loads in most materials . . . yet has ample capacity (7 yds., 9 tons) for profitable production dirtmoving in fleets. Factual, owner-verified job reports on *your* type of work are yours for the asking. Just write

**LeTourneau - Westinghouse**  
**Company**



PEORIA, ILLINOIS

## LeTourneau pictures of the month (cont'd) . . .



**THE GREATEST OF EASE**—No twisting, no turning, no wrestling bulky levers for Tournatractor operator. All he does to steer, change gears, operate blade is flick a dashboard switch. Electricity does all the work. Even in wet clay, this ease of operation pays off. This unit, assigned to push-load 5 C Tourna-

pulls on a 434,000 yd road job in Delaware, accounted for 75 to 80 loads per 50-minute hour . . . all day long. Load time for 10 pay yds averaged 35 sec. Despite short 600 ft hauls, the one pusher kept all five Tournapulls going steady. "Tournatractor is easy to handle," says operator. "It rides nice, has plenty of push."



**STRIPPING FOR STEEL**—To meet a vastly increased demand for limestone from the steel industry, Kelley Island Lime & Transport Co., Cleveland, works 2 C Tournapulls 16 hrs per day stripping limestone at their Marblehead quarries. The 2 units combined remove 418 to 436 bank yds of rocky loam overburden per 50-min hr. Average cycle: 2200 ft. Number of trips per hour per unit: 19.



**FILLING AN INSIDE, STRAIGHT**—At Chittagong in East Pakistan, 7 Tournarockers are helping move 3,500,000 yds of sand and clay for port improvement. Dumped in and around new warehouses, material will raise ground level 3 to 4 ft to prevent flooding during the monsoon season. Haul varies from 2½ to 3½ miles. Tournarockers carry 18 tons of conveyor-loaded beach sand per trip . . . dump it in a single pile, or spread it on the run, in straight, uniform windrows.



**NO STRESS, NO STRAIN**—Texas contractors, T. R. Vardeman & Son own 4 D Tournapulls . . . report each rig "moves 1000 yds per 10 hr day with average efficiency at 95%". Faster haul speeds over rough ground are made possible by pivot between Tournapull scraper and prime-mover which eliminates tilting strains.

Write LeTOURNEAU-WESTINGHOUSE CO., Peoria, Illinois, for details.

Tournapull, Tournacrane, Tournarocker—Trademark Reg. U. S. Pat. Off. Tournatractor—Trademark Pic. 448-G





## performance reports from around the world



**HEAVE-HO** — Two ages meet on the Black Sea at Kozlu, Turkey. In the background, natives beach fishing boats just like their ancestors did hundreds of years ago. In the foreground, a modern high-speed Tournatractor lifts the loads from hundreds of aching backs as it levels spoil from Turkey's newest coal mine.



**812 YDS OF SAND DAILY** — Taking a cue from parading sailors at Lakehurst Naval Air Station, N. J., Tournapulls come and go like clockwork. The 3 "C's" shown are part of Reid Contracting Company's fleet of 5, being used at Lakehurst to help move 1,500,000 yds for runway and mat extension. "These machines give superior performance where going is roughest," says Supt Ray Saunders. Each unit has averaged 812 pay yds per 9-hr day for 6 mos. Cycles, 7000 ft.



**NO TIRE BREAKAGE** — After months of double-shift hauling of Florida pit rock, Maule Industries Inc report no tire troubles on their 18-ton Tournarocker. Its big 21.00 x 25 single tires rolled easily over blasted rock or quarry floor. Smaller 6 and 12 yd trucks, used on same hauls lost time due to blowouts and other tire damage. This was

caused mostly by rocks wedging between the duals, or concentration of weight on a single small tire when rolling over rock fragments. Tournarocker and trucks brought shot limestone 1.8 to 2.2 miles from pit to crusher. For complete facts on this and other units shown on these pages, write **LeTourneau-Westinghouse Co., Peoria, Illinois.**

Tournapull, Tournarocker, Tournacrane—Trademark Reg. U.S. Pat. Off. Tournatractor—Trademark Fic-396-G



# ONE, TWO, THREE

**WITH**



Yes, only three quick, easy steps are required to set an Acrow Shore. Acrow's flat type head fits any size stringer. No redesigning of formwork is necessary.

When it comes to stripping, Acrow is faster, too. Just a twist of the collar handle and Acrow Shores are down, ready to telescope compactly. Collar threads are cleaned automatically during the stripping operation through Acrow's exclusive self-cleaning feature.

Acrow Shores are available with standard head 6" x 6"; beam type, 14" x 4"; or J head, 14" x 4". Working ranges . . . 3' 4" to 15'.

*Write for complete information*

## **ACROW, INC.**

Dept. CM-8

510 No. Dearborn, Chicago 10, Illinois

# ACROW INC.

**UNITED STATES OFFICES**  
 Chicago, Michigan 2-1010  
 New York, LEadington 2-7595  
 Boston, DEvening 8-7174  
 Philadelphia, LOwer 7-5525  
 Atlanta, EMerson 3714  
 Houston, UNDERwood 8514  
 Dallas, RIVERSide 4051  
 Birmingham, 7-5151  
 Los Angeles, DAVENPORT 6-1428  
 San Francisco, ATwater 2-1442

**ASSOCIATE COMPANIES**  
 Acrow (Canada) Ltd., Montreal  
 Acrow Venezuela S.A., Caracas  
 Acrow Brazil S.A., Rio de Janeiro  
 Acrow Uruguay S.A., Montevideo  
 Acrow Argentina S.A., Buenos Aires  
 Acrow Peru S.A. (Ingenieros), Lima  
 Acrow (Engrs.) Ltd., London  
 Acrow Engrs. (Pty.) Ltd., Johannesburg  
 Acrow Engrs. (Pty.) Ltd., Sydney

# and they're UP

## ACROW

### ADJUSTABLE STEEL SHORES

**1** Lift inner tube to approximate height desired.



**1**

**2** Insert Pin in nearest hole.



**2**

**3** Turn collar handle for final accurate adjustment



**3**



A profitable tool  
with many uses!

# BARCO *Gasoline* HAMMER

ONE MAN OPERATION!  
NO COMPRESSOR NEEDED

HERE'S why owners of the *improved* Barco Gasoline Hammer are enthusiastically acclaiming it as "*A Profitable Tool With Many Uses!*"

- New ignition system—quick, easy starting; trouble-free.
- Quick cable disconnect at handle. New handle design; switch convenient to operator's thumb.

- More portable than ever! Easily taken to any location by car, truck, or light plane.

- Versatile! A handy tool for Pavement Breaking . . . Cutting . . . Digging . . . Rock Drilling . . . Frost Breaking . . . Rod Driving. Ideal for general utility, standby, and emergency service.

- Economical! Low first cost, low operating expense, low maintenance expense. Quickly pays for itself.

- Powerful, rugged. Up to 1550 strokes per minute.

ASK FOR A DEMONSTRATION — See for yourself—ask for our nearest distributor to give you a demonstration.

Send for a copy of this interesting new Bulletin No. 613 — "BARCO GASOLINE HAMMERS".



**BARCO**  
*Manufacturing Co.*

512J Hough St., Barrington, Illinois  
*A Chicago Suburb*

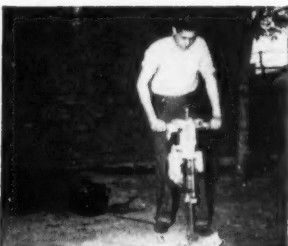
**GASOLINE HAMMERS AND RAMMERS**



**PAVEMENT BREAKING** — Used by municipalities and utilities to make street openings, break curbs, and cut trenches.



**ASPHALT CUTTING** — An easy, fast job with a Barco Hammer.



**EMERGENCY WORK** — Day or night, one man can take tool to any location.

## On-the-Job Contractor-Labor Relations

by LEON B. KROMER, JR.

### Strikes and Strike Settlements

STRIKES AND STRIKE SETTLEMENTS continue front and center as contractors and building trades unions lock horns over contract negotiations. Substantially all construction in 46 northern California counties is at a standstill. Wilmington, Del., is still tied up and New York, which has not had a serious strike in over 5 yr, is faced with a major shutdown.

In California, the "selective" strike of laborers (CM&E July 1953, p. 197) was met by a shutdown order from the Associated General Contractors, Northern and Central California chapters. Approximately \$500 million in construction is affected. The laborers originally demanded a 20c hourly increase but cut this to 15c, which would boost their rate to \$2 per hr. The contractors have stood firmly on their offer of 10c per hr.

#### All Work Halted

Wilmington carpenters rejected a 12½c hourly increase which had been accepted by five other unions and began to picket all construction operations in the area. The plumbers and steamfitters also rejected the offer but did not set up picket lines. Union members of the five unions, in agreement with the contractors reporting back to work, refused to cross the carpenters' picket lines. All work was brought to a halt. The carpenters are seeking a 20c hourly pay increase now and an additional 10c for the second year of a 2-yr agreement.

Trouble in New York is on two fronts—the strike of union teamsters who deliver sand, gravel and ready-mix concrete, and stalled wage negotiations between contractors and the building trades. Two employers' associations negotiate independently of each other; the General Contractors Association for the "heavies"—builders of piers, bridges, tunnels—and the Building Trades Employers Association, which negotiates for most

(Continued on page 84)

**There are  
more MultiFoote  
Pavers in service  
than any other  
make!**

THE QUALITY OF EQUIPMENT like that of people can be recognized by the Company it keeps. MultiFoote Pavers have been proved on the jobs of leading contractors the breadth of the country. There is no better assurance of the service that you require.

John Arborio on the Taconic Parkway, Poughkeepsie, N.Y.

Bero Engineering & Construction Co. on New York State Highway work.

Fredrickson & Watson, Oakland, Calif., on State Highway work.

A. I. Savin of Hartford, Conn., on airport work.

Robert R. Anderson—one of 19 MultiFoote Pavers on Eden's Parkway.

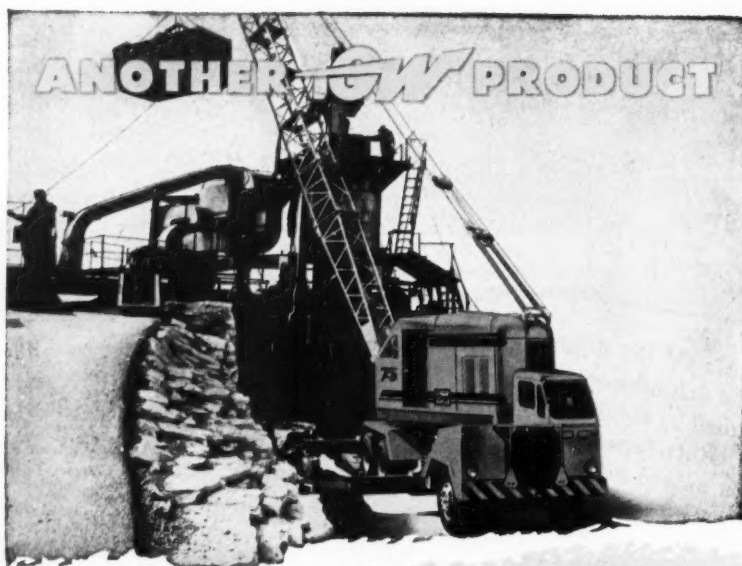
S. N. Nielsen of Chicago pouring walls and floors with a HighLift Boom.

**MULTIFOOTE**  
**CONCRETE PAVER**

**BLAW-KNOX**

FOOTE CONSTRUCTION  
EQUIPMENT DIVISION  
OF BLAW-KNOX CO.  
1910 State Street,  
Nunda, New York





# Gar Wood 75

## A Heavy - Duty Truck Crane that can Lift up to 20 Tons!

Gar Wood's 75BT truck crane gives you a specially designed, heavy-duty chassis for mobility and speed with full 40,000 lb. lifting capacity . . . Folding boom for easier handling in heavy traffic . . . High gantry, optional fluid coupling to absorb shock loads and power load lowering can't be beat for smooth, precision work! . . . Power actuated mechanical drum clutches, exclusive right angle drive, conical hook rollers and many other operating advantages for faster, easier work . . . The 75BT truck crane is quickly convertible to all attachments including the new, exclusive, profit-making Gar Wood Foundation Borer — the machine that bores and bells in one fast operation . . . Get details from your dealer—

### TWO CRAWLER MOUNTED CRANES!

Standard-duty 75A and heavy-duty 75B models. With 35 ft. boom on 12 ft. radius a 75A lifts 16,500 lbs. and a 75B, 21,200 lbs. . . . Both are easily convertible in the field!



F-330



**GAR WOOD INDUSTRIES, INC.**

Findlay Division • Executive Offices • Wayne, Michigan

### LABOR . . . Continued from page 82

of its 1,000 general and specialty contractor-members.

Negotiations began early this year to continue the 3-yr "Master Agreement." Union demands presented in April represented, according to the contractors, a 60c-per-hr increase (including fringe benefit increases), or roughly an 18% increase for most of the trades.

Negotiations came to a head when the General Contractors Association settled with the dock-builders and carpenters for what amounts to approximately a 32c hourly increase. The BTEA has refused to accept this settlement, although it has agreed with the New York Building Trades Council to drop the Master Agreement—which means the end of the 3-yr stabilization agreements. In the meantime, the unions in the Building Trades Council, with the exception of the carpenters, have agreed to continue work during negotiations even though the agreement expired July 1.

#### Settled

A 5-week carpenters' strike was settled in Detroit when the union and contractors agreed to a 12c-per-hr increase plus a 3c-per-hr employer contribution to a welfare fund.

The long (48 days) strike of carpenters in the Philadelphia area ended when contractors and unions accepted the government mediator's recommendation. By the compromise, carpenters receive a 20c hourly increase now, plus an automatic increase of another 10c in May 1954, under a 2-yr agreement. Fringe questions settled provided that:

A foreman may not supervise more than 15 men; when reporting for work the first day a carpenter will receive not less than 4 hr pay.

Wage contract settlements reported to CONSTRUCTION METHODS AND EQUIPMENT indicate contractors and unions are still holding to the 10c to 15c average increase.

### Jurisdictional Disputes

It looks like the National Joint Board for the Settlement of Jurisdictional Disputes (CM&E June 1952, p. 120) will begin to function again with rule changes intended to eliminate some of the discord that resulted in a boycott of the Board by the electrical union and



two specialty contractors associations. Chief changes will bar officers of the Building Trades Department from serving on the Board and permit alternates to act for absent members. It may be that Dick Gray, president of the department, will be replaced by a representative of the electrical union.

In the meantime you can still refer jurisdictional disputes to the Board, particularly if a strike is threatened.

\* \* \*

Contractors who install conveyors and material-handling systems now can assign ironworkers to erect legs, platforms, hangers and framework, millwrights to install and adjust the machinery and moving parts, without facing a jurisdictional dispute. This briefly is the result of months of negotiations with final agreement between Morris Hutcheson, General President of the carpenters, and John Lyons, International President of the ironworkers.

The two union presidents have clarified a one-paragraph agreement which for years has been the source of many disputes.

## Two Important Appointees

With no chance of any revisions to Taft-Hartley passing this session of Congress to relieve contractors and unions of representation elections, you will be hearing a lot from Guy Farmer and Whitley McCoy.

Farmer, a Washington lawyer, Rhodes scholar and University of Virginia graduate, was appointed Chairman of the National Labor Relations Board by the president. He succeeds Paul Herzog who resigned recently. Considered politically independent, Farmer was at one time Assistant General Council of the National Labor Relations Board.

McCoy, Professor of Law at the University of Alabama, will head the Federal Mediation and Conciliation Service. A staunch believer in direct, outside pressure-free negotiating between management and labor, McCoy has had broad experience as an arbitrator and mediator. He served for a time with the old U.S. Conciliation Service and as a trial examiner for the National Labor Relations Board.



# Gar Wood 75

## A New 3/4 yd. Shovel with Many Exclusive Features!

Gar Wood has designed the new "75 series" shovels to combine many new and exclusive operating features with time-tested standards of advanced design and rugged construction . . . Both the standard-duty 75A and the heavy-duty 75B have *power actuated mechanical drum clutches, right angle drive, independent chain crowd, power steering, independent travel, conical book rollers* to eliminate rocking and an optional *hydraulic coupling* to absorb shock loads . . . Easy field conversion for crane, clam, dragline, magnet, pile driver or trench hoe work . . . Don't miss checking the profit potentials of the exclusive new Gar Wood Foundation Borer—the machine that bores and bells in one operation . . . See your dealer for details —

### EASY CONVERSION IS A FEATURE



Your Gar Wood shovel can be quickly adapted for trench hoe work. Digs up to 17'10" depth, dumps at heights up to 19'3". Standard 40" dipper. 36", 31" and 26" widths optional.

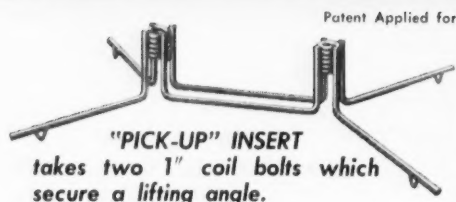


**GAR WOOD INDUSTRIES, INC.**

Findlay Division • Executive Offices • Wayne, Michigan

F-533

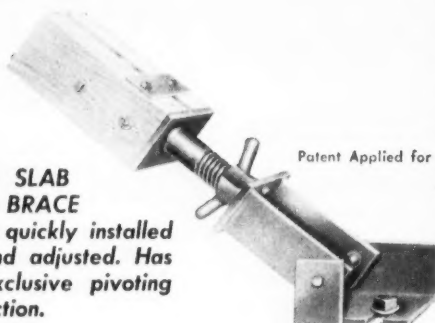
# 3 SUPERIOR ACCESSORIES FOR more efficient handling of "TILT-UP" SLABS



**"ANCHOR" INSERT**  
in both the "Tilt-Up"  
slab and the floor  
slab provides an-  
chorage for slab  
brace bolts.



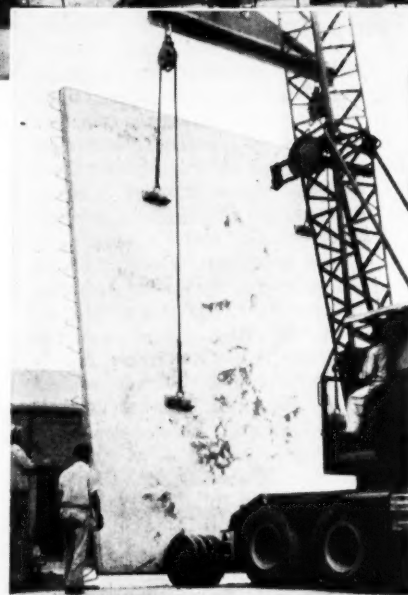
**SLAB  
BRACE**  
is quickly installed  
and adjusted. Has  
exclusive pivoting  
action.



Are you bidding on a "Tilt-Up Slab" job? Are you starting a "Tilt-Up Slab" Job? Then you will be interested in these SUPERIOR accessories, designed for faster and more efficient handling of precast panels.

The Superior "Pick-Up" Insert provides dependable anchorage for bolts which secure a lifting angle to which slings are attached when the panel is raised. "Anchor" Inserts in both the "Tilt-Up" slab and the floor slab secure the temporary bolts to which the braces are attached. With Superior's adjustable and pivoting Brace you have an efficient as well as inexpensive answer to both ordinary and unusual bracing problems . . . you merely assemble with 2 x 4's of lengths to fit individual jobs.

Wherever slabs are being "tilted-up" . . . on the Pacific Coast . . . in the Midwest . . . the South, and in the East . . . contractors are consistently using Superior Inserts, Anchors and Braces. For details request a copy of Bulletin TU-2.



## SUPERIOR CONCRETE ACCESSORIES, INC.

4110 Wrightwood Avenue, Chicago 39, Illinois

New York Office  
1775 Broadway, New York 19, N. Y.

Pacific Coast Plant  
2100 Williams St., San Leandro, Calif.



To meet demands of contractors and dealers...

## Schild Puts Bantams on Crawlers

Another Equipment Development Report

By HAROLD W. RICHARDSON, Editor

EVER SINCE IT STARTED manufacturing in 1945, the Schield Bantam Co. has stuck to one size and model crane and excavator—a truck-mounted  $\frac{3}{8}$ -yd rig. The popularity of this single idea is attested by sales that have put the company in the front rank in number of units sold, topping 1,000 in 1952 alone. Continuing this single purpose in size and model, Schield Bantam also now offers the same basic unit mounted on rugged crawlers of its own design and manufacture, designated the C-35.

Crawler units take the same interchangeable front-end equipment— $\frac{3}{8}$ -yd shovel, dragline and backhoe—as do the truck units, but as cranes they are rated at 5 tons capacity at 10-ft radius over the end, in comparison with a 6-ton rating

for truck mountings with outriggers. Except for addition of the crawler drive mechanism, there are no changes in the basic unit above bottom of top bed casting.

Last fall certain features of the Bantam were redesigned in accordance with a survey made among machine owners and distributors. Larger and air-cooled clutches, larger gears, cab ventilation, relocation of controls, and a hinged cab roof for steel-erection visibility were the principal improvements. This survey also revealed a demand for the same efficient, versatile little unit mounted on crawlers.

In response to this demand, Schield Bantam has developed the new model, and has managed to produce it to sell at the exception-

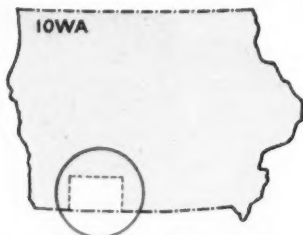
ally low price of \$9,350 fob factory, less front-end attachments, but including a 1,400-lb counterweight.

The C-35 is a little rig with big-rig ideas of performance. One very important feature is its ability to travel in either direction at one of two speeds, and swing and hoist at the same time. The boom hoist is powered both up and down, too, and is independent of all other actions. These independent operations, simultaneous if desired, allow perfect control of the load at all times—a highly desirable feature, according to contractors.

She's a husky and stable little job, too, with extra long tracks, 96-in. c to c sprockets, and wide gage, 80-in. c to c tracks, and only 10½-in. ground clearance. Stand-  
(Continued on page 90)



# Taking Iowa



**RINGGOLD COUNTY** has 935 miles of county roads. This is the location of farm to market road construction done by the International Crawler fleet of Easter & Schroeder, Inc.

**Pick Your Site and Set Your Hour...  
We'll Demonstrate Our Tractor's Power**



**"IDEAL FOR FARM-TO-MARKET ROAD CONSTRUCTION,"** say Joe Easter and Don Schroeder (above). "In our eight month's working season, our five TD-18A units, with the sixth as a pusher, moved approximately 540,000 cubic yards, with minimum downtime."



**ROAD BUILDING PRODUCTION LINE!** Part of the Easter & Schroeder fleet of International crawlers on a regrading job in Ringgold County, Iowa. On this seven-mile stretch they moved 78,000 cubic yards in three weeks' time. *"We move it that way all the time,"* say the owners.



TD-24



TD-18A



TD-14A



TD-9



T-9

# to Town

## Farm-to-market roads get big boost fast from the International Crawler fleet of Easter & Schroeder, Inc.

The dirt flies when Easter & Schroeder, Inc., move in with their fast, powerful fleet of International crawlers . . . and Iowans can get to town and back in time to do the milking. For these Griswold, Iowa, contractors specialize in farm-to-market roads in the tall corn state.

Take the seven-mile job in Ringgold County, Iowa, you see here. In three weeks' time, Easter and Schroeder moved 78,000 cubic yards of dirt to give the road a 24-foot top on a 66-foot right of way.

Easter and Schroeder came to this Ringgold County job from one in Taylor County, where they moved 35,000 cubic yards of dirt on a two-

mile stretch, completing the job in six 11-hour days.

*"After 25-years' experience working in dirt, we settled on a crawler fleet one hundred per cent International,"* say these contractor partners. The fleet now consists of six International TD-18As with scrapers and 'dozers and a TD-14A with tamping roller.

Do you want speed and dependable economy under tough conditions? Then get in touch with your International Industrial Distributor, for all the facts on Power that Pays!

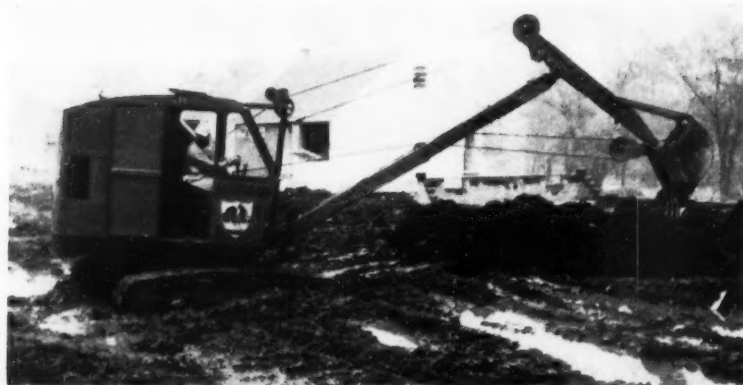
INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILL.

POWER  
THAT PAYS

INTERNATIONAL



SEVEN GREAT INTERNATIONAL CRAWLERS...EACH WITH  
MATCHED EQUIPMENT FOR EVERY JOB



FIRST SCHIELD BANTAM C-35 crawler rig off assembly line went to Walter Cotier of Allied Company, Rahway, N. J., who ordered it sight unseen and without a price quotation. With a backhoe front end, he put it right to work digging sewer trenches at a muddy housing site. Backhoe, dragline, shovel and crane front ends are interchangeable with Bantam truck-mounted machines.

ard tracks are 16 in. wide, which gives a ground bearing pressure of only 5 psi under treads. Tracks 24 in. wide are available, which reduce the bearing pressure to 3.3 psi. Without front-end attachments, the machine weighs 15,522 lb.

The only change necessary in the basic unit to adapt it for crawler mounting was addition of travel drive mechanism. This was simple, for the engineers merely connected another double-swing unit, identical with the swing mechanism, with a shaft extending down through the hollow king pin in the lower bed frame. Travel power is through a chain drive, same as all other main operations.

#### It's Modern

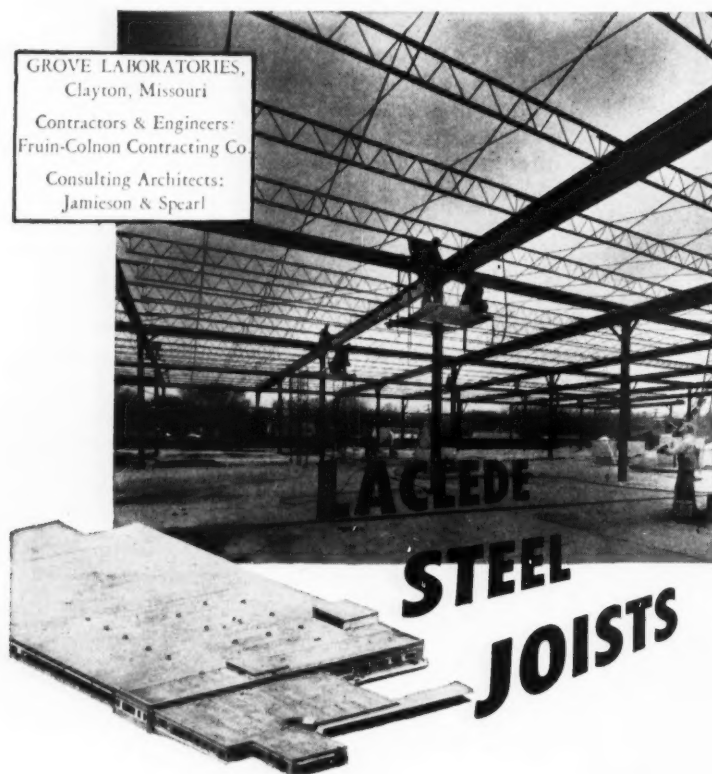
Just because Waverly, Ia., site of the plant, is in the heart of the corn belt, don't get the idea that Schield Bantam production is a farm blacksmith operation. We visited the plant last month to see the new crawler machines at work, and were amazed at the modern manufacturing facilities. Schield buys standard component parts, but makes everything else, including booms and buckets, and cuts and flame-hardens all gears. Bed frames and sub-assemblies are welded on jigs. Then the top bed frames are set on four-wheel dollies that are pushed by hand down a modern assembly line for final fabrication.

Completed basic units are placed on crawler assemblies—rebuilt Army surplus or new crane carrier trucks, as the customer desires — or are shipped out for mounting on the buyer's own truck. The plant is geared to turn out a complete basic unit every 108 min—a rate many a manufacturer would be proud to achieve.

Complete specifications are given in the accompanying table, and the pictures show the various details of the new crawler machine.

Incidentally, we witnessed a remarkable demonstration of a crawler machine fitted with a dragline front-end, and mounted on  
(Continued on page 92)

GROVE LABORATORIES,  
Clayton, Missouri  
Contractors & Engineers:  
Fruin-Colnon Contracting Co.  
Consulting Architects:  
Jamieson & Spearl



**for FRAMING LARGE AREAS  
ECONOMICALLY... QUICKLY**

**Specify These Laclede Products:** Welded Wire Fabric • Form & Tie Wire • Multi-Rib Reinforcing Bars • Joists • Corrugated Steel Centering • Spirals • Conduit • Steel Pipe • Electrical Weld & Gas Weld Tubing



**LACLEDE STEEL COMPANY**

St. Louis, Mo.



*Minimize*  
**PITTING**

*Eliminate*  
**PATCHING**



*The Wonder Grease for Concrete Forms*

**R**EGARDLESS of whether you use steel or wooden forms for concrete work — you can apply Globe Form Grease by spray, brush, or swab. This time-tested paste emulsion will reduce peeling and pitting to a minimum when forms are removed, and practically eliminate patching.

Due to its special adhering qualities, Globe Form Grease requires only a thin coating for utmost effectiveness. In fact, one gallon adequately covers approximately 200 square feet! And in addition — Globe Form is stainless, leaves a whiter smoother surface, and eliminates the need for painting.

Why not write for full particulars today? Once you use Globe Form Grease, you'll understand why engineers and contractors hail it as the "wonder grease" for concrete forms.

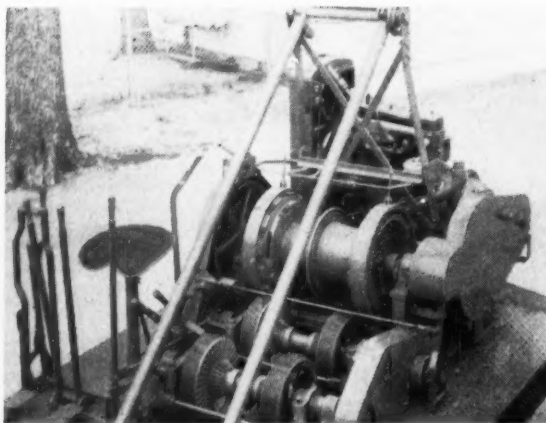
**OILS and  
GREASES**  
for every purpose  
**DIESEL  
STEAM  
AUTOMOTIVE**

Write for descriptive  
booklet of all Borne,  
Scrymser products.

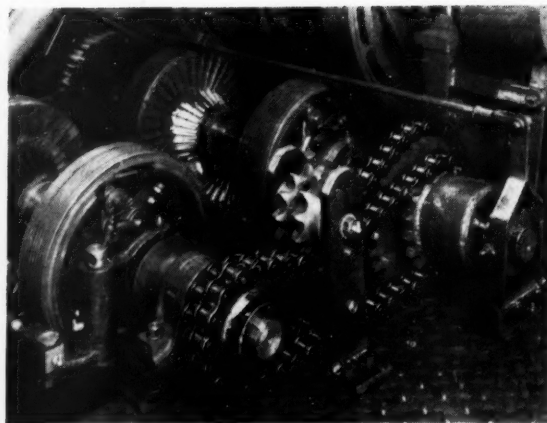
**BORNE**  
Since 1874  
**SCRYMSER**

Our Laboratory  
Facilities are  
always at your  
disposal

**BORNE, SCRYMSER COMPANY**    ELIZABETH, N. J. • CHARLOTTE, N. C.



ONLY CHANGE NECESSARY to adapt Bantam basic unit to crawler mounting is addition of second swing mechanism, shown here at front, to serve as travel power transmission. Note compact grouping of control levers.



HERE'S THE WAY the two-speed crawler travel is driven by two chains off the swing drive shaft. This arrangement permits simultaneous travel and swing. Boom and hoist lines are also independently operated.

experimental 32-in. wide tracks. These tracks are not yet available, as Schield is not satisfied with the pad design, and wants to make further changes.

Yet, we saw the wide-track machine cross back and forth across

a deep muddy slough without trouble. A man in boots following behind sank above his knees, and finally bogged down. Ground-bearing pressure with the wide tracks is estimated at only 2 psi, which makes the machine prac-

tically a floating rig.

From what we saw at Waverly, we believe the new Schield Bantam crawler machine will more than meet requirements specified by contractors and dealers.

(Continued on page 94)

## The manufacturers of Waterplug, Thoroseal, Quickseal

# Introduce

# 3

# NEW PRODUCTS



### RED STAR THOROLOK

Intended for asbestos shingles, on roof or exterior walls of your home or other building. THOROLOK is prepared in six beautiful pastel colors. Ask for Color Card 32-C.



### BLUE STAR THOROLOK

Prepared especially for basement floors which need protection and corrects unsightly appearance. Furnished in six beautiful colors. Ask for Color Card 32-C.



### INVISIBLE THOROCLEAR

Clear, water-repellent material for porous brick, stone, concrete, stucco, asbestos siding and shingles, interior plaster and masonry surfaces, where texture and color are to be retained.

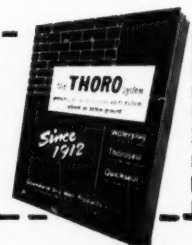
### NEW PROTECTION

With addition of three newly-tested products to The THORO System, any type surface such as steel, wood, asbestos siding and shingles and every type masonry and stucco can be protected from excessive weathering, caused by rain and changing temperatures.

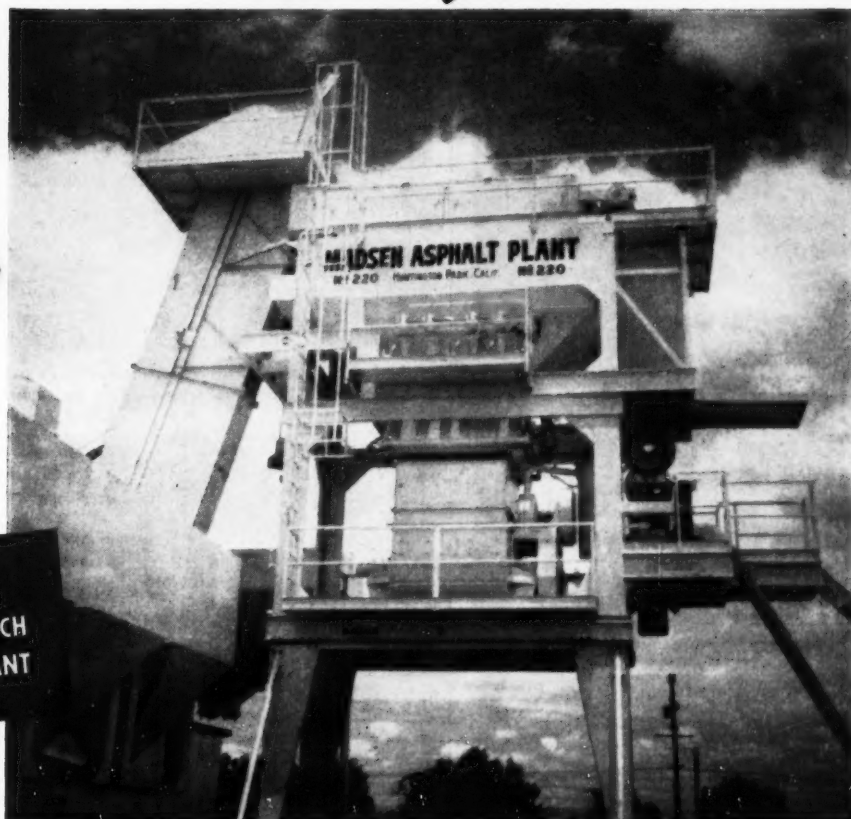
## Standard Dry Wall Products

NEW EAGLE, PENNSYLVANIA

**"HOW TO DO IT"**  
Write for our  
pictorially de-  
scribed literature



# MADSEN LEADS *in California!*



MADSEN MODEL 481  
PORTABLE 4000-lb. BATCH  
CAPACITY ASPHALT PLANT



*Equipment that Serves*®

**T**here are more MADSEN Asphalt Plants in California than any other make...and there have been more MADSEN Plants sold in California in the past two years *than all other makes combined!*

You buy an asphalt plant to make money... and MADSEN'S superior engineering, sound basic design and outstanding features have

shown contractors again and again that they can make more money when they operate a MADSEN Asphalt Plant. That's why MADSEN leads the field in the state that leads all others in the number of asphalt plants. Remember MADSEN, when you are in the market for a money-making asphalt plant.

Write for complete details on the new MADSEN 4000-lb. Batch Capacity Asphalt Plant...the plant that gives you reduced cost-per-ton for every ton produced.

ESTABLISHED 1910...THE OLDEST  
MANUFACTURER OF ASPHALT  
PAVING PLANTS IN THE WEST

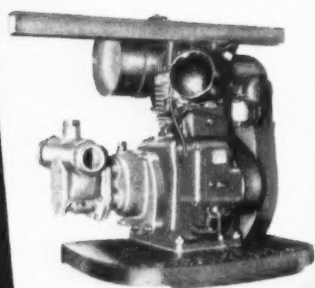
**MADSEN IRON WORKS, INC.**  
P. O. BOX 589 • HUNTINGTON PARK, CALIF.



## Porto-Pump

For  
Pressure Testing  
Water Mains.

Jetting Operations • Core and Exploratory Drilling Operations • Cleaning Earth Moving Equipment • Cleaning Transit Mix Cement Trucks and Various Other Jobs Requiring a Portable Pressure Pump.



Powered by a dependable, 4 cycle, air-cooled gas engine, the Porto-Pump features rubber gear construction, mechanical seals (no packing or packing glands to adjust), prelubricated bearings (eliminates necessity for manual lubrication) and adjustable automatic by-pass valve.

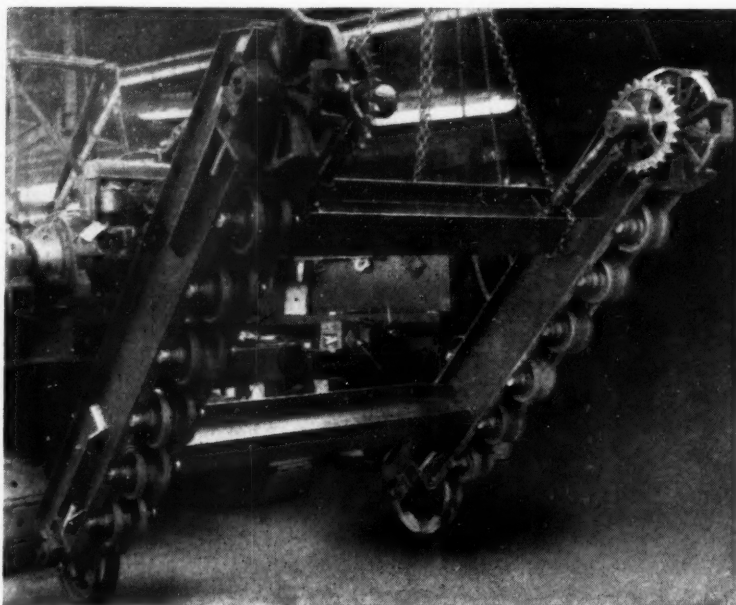
Contractors throughout the country prefer the Porto-Pump because of its light weight and portability, broad base for operating on soft ground and the fact that it quickly develops the desired pressure (maximum 200 lbs.).

Dealerships Available  
Inquiries Invited

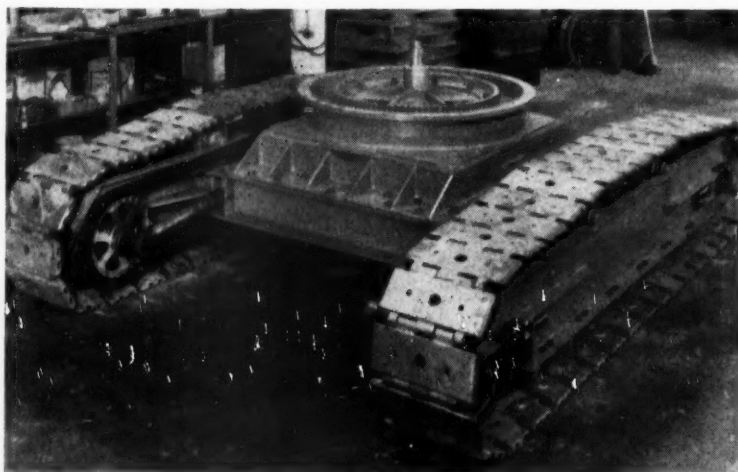
**PORTO-PUMP, INC.**

227 IRON STREET • DETROIT 7 • MICH.  
TELEPHONE LORAIN 7-1261

## CRAWLERS FOR BANTAM . . . Continued from page 92



HUSKY CRAWLER FRAMES are fitted with six bottom rollers for each track for greater stability. Crawler drive sprockets and idlers are adjustable to keep tracks tight.



ALL-WELDED crawler assembly is designed and built for rugged service. Bottom bed frame, bolted to crawler frame, is standard for both truck and track models, except for travel drive shaft shown here.

### Specifications—Schield Bantam C-35

#### GENERAL:

Full circle swing  
Independent travel  
Power boom hoist, up and down  
1,400-lb counterweight  
4 trunnion rollers  
4 hook rollers  
Enclosed triple chain drive  
Main gears flame hardened  
Shipping weight (less front end) 15,522 lb  
Power dipper trip (optional)  
Price (less attachments) \$9,350

$\frac{3}{8}$ -yd clamshell  
1,400- to 1,800-lb piledriver

#### POWER:

37-hp LeRoi gasoline engine  
Diesel or electric optional

#### CLUTCHES:

Drum clutch	3x17 in., 140 sq in.
Swing clutch	3x12 in., 98.3 sq in.
Travel clutch	3x12 in., 98.3 sq in.
Drum brake	3x20 in., 160.5 sq in.

#### TRACK MOUNTING:

Width tread, in.	16	24
Track gage, c to c, in.	80	80
Over-all track width, in.	96	104
Over-all track length, in.	123	123
Bearing area, sq. in.	3232	4840

#### ATTACHMENTS:

Crane booms 25 ft to 45 ft  
 $\frac{3}{8}$ -yd shovel  
 $\frac{3}{8}$ -yd dragline with fairleads  
 $\frac{3}{8}$ -yd backhoe

Bearing pressure, psi 5 3.3  
 Ground clearance, in. 10 1/2 10 3/4  
 Steering—dog clutches  
 6 track rollers

#### SPEEDS:

Travel, forward or reverse, low, mph 0.75  
 high, mph 1.50  
 Swing, rpm 6  
 Line, 8-in. lagging, fpm 143  
 Line, 10-in. lagging, fpm 175  
 Boom hoist line, fpm 75

#### CRANE CAPACITIES (rated at 75% tipping load):

##### OVER END

25-ft boom—10,050 lb at 10 ft to  
 2,750 lb at 25 ft  
 30-ft boom—7,325 lb at 12 ft to  
 1,900 lb at 30 ft  
 35-ft boom—7,225 lb at 12 ft to  
 1,250 lb at 35 ft  
 40-ft boom—5,250 lb at 15 ft to  
 1,150 lb at 35 ft  
 45-ft boom—3,400 lb at 20 ft to  
 1,050 lb at 35 ft

##### OVER SIDE:

25-ft boom—8,125 lb at 10 ft to  
 2,500 lb at 25 ft  
 30-ft boom—6,300 lb at 12 ft to  
 1,800 lb at 30 ft  
 35-ft boom—6,200 lb at 12 ft to  
 1,200 lb at 35 ft  
 40-ft boom—4,500 lb at 15 ft to  
 1,100 lb at 35 ft  
 45-ft boom—2,950 lb at 15 ft to  
 1,000 lb at 35 ft

### Who Is Responsible?

GET THE FACTS, Mr. Contractor, is the plea of a timely construction safety note coming from the National Surety Corp. The plea continues:

"Who is responsible? This is not an unusual question for the safety engineer to ask the contractor. But you would be surprised at the answers contractors give. For everything except gathering accident facts contractors assign definite responsibilities, but no one is responsible for the accident facts.

"If sound decisions concerning accidents are to be made, all of the facts are essential. Why not require a weekly report from each job, each superintendent, or each foreman showing who was hurt, what caused the accident, how serious the injury and what was done to prevent a recurrence? The report should show how much time in hours or days was lost.

"Such reports will provide the information necessary to determine the cost of your accidents. Mr. Contractor—reports need not be long or involved, but they must be submitted to you regularly for your analysis so you have all the facts."

# NEW DRIVE-IT 320 with BREAK-OPEN ACTION



## MAKES SPLIT-SECOND FASTENING TO CONCRETE OR STEEL... EASIER THAN EVER

**BREAK-OPEN ACTION** for fast, easy loading and extraction makes new **DRIVE-IT "320"** the easiest operating stud driver on the market. This smooth-working action means a greater saving to you on concrete or steel fastenings.

Here are other exclusive **DRIVE-IT** features that make it the best tool available:

**ONE POWER LOAD.** No need to buy and stock various strength power loads with exclusive **DRIVE-IT** power control method.

**AUTOMATIC EXTENSION BARREL** allows fastenings inside junction boxes and other recesses. No need to buy and attach extra barrels.

**SWIVEL SAFETY PAD** of tough rubber and steel protects operator and permits fastenings next to walls.

**SAFE** two-handed firing sequence and length of tool offer maximum protection. Can't be discharged accidentally or in mid-air.

**DRIVE-IT** pins are listed and approved by Underwriters' Laboratories.



#### MAIL NOW FOR MORE INFORMATION

##### POWDER POWER TOOL CORP.

7526 C. S. W. Macadam Portland 1, Oregon

- ☐ We would like a free demonstration of DRIVE-IT.  
☐ Please send literature on new DRIVE-IT 320.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

**DRIVE-IT**  
 the original  
 POWDER ACTUATED TOOL

"For TOUGH JOBS...  
No Other Oil can  
match



Sinclair SUPER TENOL"

... Elvin L. Jones, Supt. of Maintenance  
Standard Sand and Silica Company

The Standard Sand and Silica

Company of Davenport, Florida, mines 2,000 tons of sand a day, six days a week. Its products are used in concrete, masonry work and in sandblasting ships, buildings and railroad equipment.

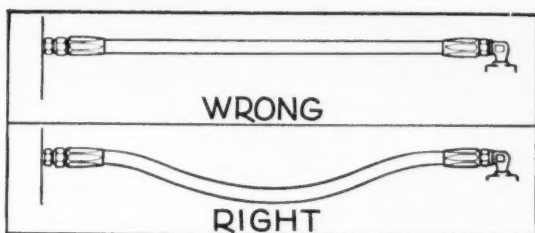
One of the main pieces of equipment is a Super C Tornadoizer. Mr. Elvin L. Jones, Supt. of Maintenance says that "Sinclair SUPER TENOL® is giving *superior service* in this machine. When it comes to tough jobs... there's not another oil on the market that can match SUPER TENOL."

He continues, "SUPER TENOL has also been used in our G.M. 6-71 diesel for 18 months. One third of the time, this machine operated 24 hours a day... *and we haven't spent a single penny for maintenance.*"

To find out how Sinclair Products can help you cut maintenance costs and keep production in high gear, call your local Sinclair Representative or write to Sinclair Refining Company, 600 Fifth Avenue, New York 20, N.Y.

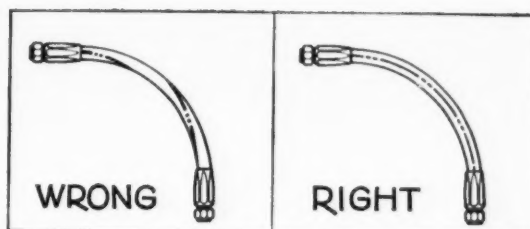
**SINCLAIR SUPER TENOL**  
...for YOUR Tough Jobs





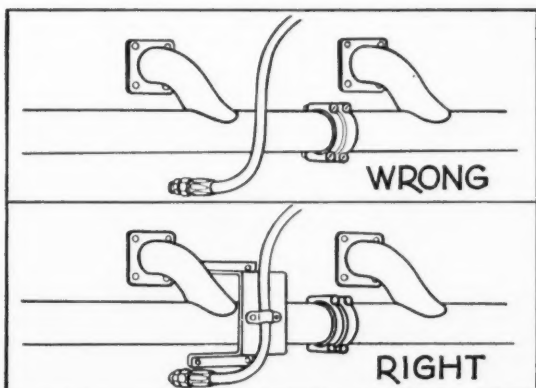
#### Leave some slack...

Hose will change in length from  $\pm 2\%$  to  $-4\%$  when pressurized, so provide slack or a bend to compensate for these changes.



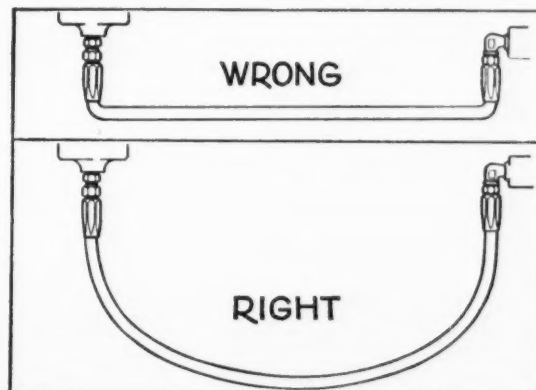
#### Don't twist it...

If high operating pressures are applied to a twisted hose, the line may fail or the attaching nut may become loose.



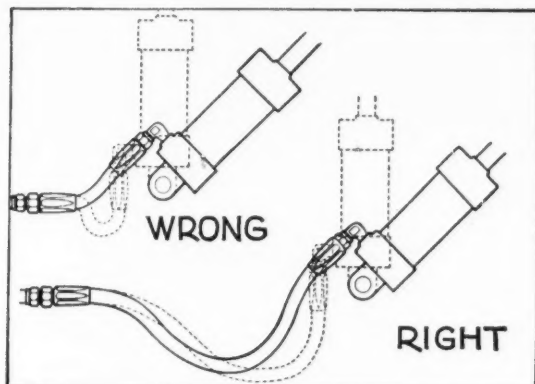
#### Protect it from heat...

Lines that pass too close to a hot exhaust manifold should be fitted with a fireproof boot or metal baffle as heat protection.



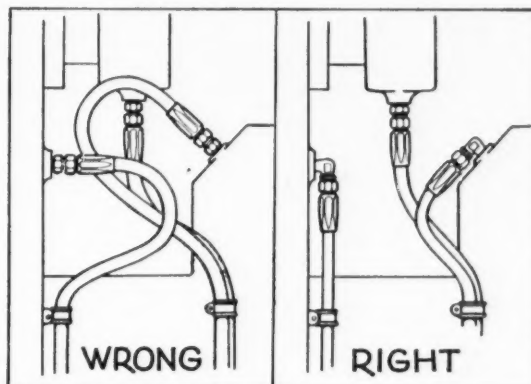
#### Keep bends large...

Kinking of line and restriction of flow result when bends are too sharp. Check the hose catalog for recommended minimum radius.



#### Make it long enough...

When assembly is subject to considerable flexing, leave hose long enough to absorb it—the metal hose fittings don't bend.



#### Use elbows and adapters...

When hose lines snake all over, inspection and maintenance are difficult. Elbows and adapters make for a cleaner installation.

## Hints on Care of Flexible Hose

By R. H. MCGREGOR, Aeroquip Corp.

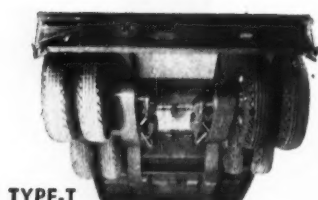
THERE ARE three basic factors which govern the longevity of the flexible hose lines and fittings that are often a vital part of construction equipment. These are: (1) proper selection of materials, (2) proper installation, and (3) preventive maintenance.

In selection of a hose-line assembly (hose plus fittings) it is necessary to study the job, then select the assembly best designed and engineered to do that specific job. These factors include working pressures, bend radii, range of operational and ambient temperatures, volumetric expansion, fire resistance and fluid resistance. There are more, but these are of



**NOW AVAILABLE -**  
with a rear unit to  
meet your preference  
or legal requirements

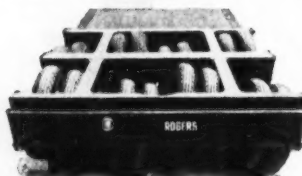
Great versatility and exceptional speed of disconnecting, loading and reconnecting have conclusively proved the superiority of



**TYPE-T**



**TYPE-H**



**TYPE-D**

## ROGERS POWER LIFT DETACHABLE GOOSENECK TRAILERS

These trailers also embody the exclusive ability to drop the deck to clear low overhead obstructions or raise the deck to pass over humps in the roadway.

Of interest, too, is the fact that you can obtain this remarkable gooseneck in conjunction with any of the popular Rogers rear units illustrated here.

This enables purchasers to meet special load requirements, to comply with their state road laws or simply satisfy their own preference, many of which have been established through years of satisfactory service with certain types of Rogers Trailers.

**Write for all the facts.**

*Developed by The Trailer Pioneers*

**ROGERS BROS. CORP. ALBION, PENNA.**

**DISTRIBUTED BY**

**220 Orchard Street**



**Divided bed, tilt deck trailer with gooseneck.**

## FLEXIBLE HOSE CARE

*Continued*

major importance for long life.

The next factor of importance is proper installation. The working efficiency and lifetime span of any hose line is cut down considerably if not properly installed. Some points to remember are:

1. Pressure governs the length of an assembly. There can be as much as 6% change in length when a line is pressurized.
2. Never route a hose line near, or over, hot pipes (like a hot exhaust manifold) unless it is protected with a sleeve or metal baffle.
3. Remember that the fittings are not flexible; always make sure that there is sufficient hose to absorb all the flexing or vibration.
4. A hose-line assembly should never be twisted.
5. Be careful not to bend an assembly less than the cataloged minimum radius. A kinking or restriction of flow could result.
6. A helpful hint is to use adapters or elbows to insure cleaner installations.

Finally comes the old medicine, "an ounce of prevention . . .". It certainly holds true in maintaining hose lines at peak performance. They can be tested by removing them and subjecting them to pressures over and above those of their regular work load to see if they are still durable. Visual inspection for leakages is important, especially around the connections. Many times the swivel nuts are cross-threaded and are improperly seated. Often they need tightening. On other occasions, hose lines may be chafing against an accessory, in which case a visual inspection would quite likely have detected the condition.

Many alert construction firms have learned that costly downtime can be averted by the simplicity of design of flexible hose assemblies. Because the fittings can be used again and again, replacing a hose line can be accomplished right on the job in a matter of minutes with simple tools. Bulk hose can be kept on hand, a new section can be cut, screwed into the reusable fittings, and the assembly is as good as new.



**DAVE GUSTAFSON & CO. INC.**  
HIGHWAY CONTRACTORS

PHONE 8-3851

SIoux FALLS, S. D.

502 EAST SIXTH

January 9, 1953

Caterpillar Tractor Co.  
Peoria,  
Illinois

Gentlemen:

Our experience in the contracting business dates back to 1926. Our original equipment consisted of one Caterpillar Model Sixty Tractor.

When Caterpillar came out with the DW10 rubber-tired Tractor, we bought two of these units with scrapers as we felt that moving dirt on rubber-tired rigs was a better way of getting the job done. Caterpillar didn't let us down!

In July of 1951 we bought our first DW21 Tractor-Scraper outfit. The performance of this machine was so good that we added two more units in February 1952. Since that time we have purchased four more DW21 Tractor-Scraper outfits: two in April and two more in September of 1952 for our road building projects in South Dakota, because we have found that this is the cheapest method known today for handling dirt on projects such as ours.

When we bought the two DW21 Tractor-Scraper units in September we had just started work on a sub-contract from Peter Kiewit Sons Co. for grade construction of the "four lane highway" from Weaver Airforce Base to Rapid City, South Dakota, consisting of 650,000 cubic yards to be moved in 90 calendar days. Hauls on this job ranged from 400 feet up to 2 1/4 miles one way. Working a single ten hour shift, six days a week our DW21s really put it across on time.

In addition to our DW21s, we have ten Caterpillar crawler Tractors, and five Caterpillar No. 12 Motor Graders.

Our DW21s have the power and stamina to stay on the job and keep the dirt "moving" without costly breakdowns and delays. We feel that Caterpillar performance is second to none and is backed up by the best parts and service facilities to be found.

Very truly yours,

DAVE GUSTAFSON & CO.

*L. S. Malm*

L. S. Malm  
Vice President

**Bought  
one DW21,  
reordered  
6 more  
in 14 months!**



Dave Gustafson & Co., Inc., of Sioux Falls, S. D., bought its first Caterpillar DW21 and Scraper in July, 1951. By September, 1952, it had a fleet of 7 of these earth-moving Cat\* units.

Why?

L. S. Malm, vice president of the company, has a telling explanation:

"We have found this is the cheapest method known today for handling dirt on projects such as ours."

Don't keep throwing good money after bad on less

capable earthmoving equipment. Have your Caterpillar Dealer demonstrate the money-saving advantages of having DW21s on your side.

Caterpillar Tractor Co., Peoria, Illinois.

**CATERPILLAR\***

\*Both Cat and Caterpillar are registered trademarks. (9)

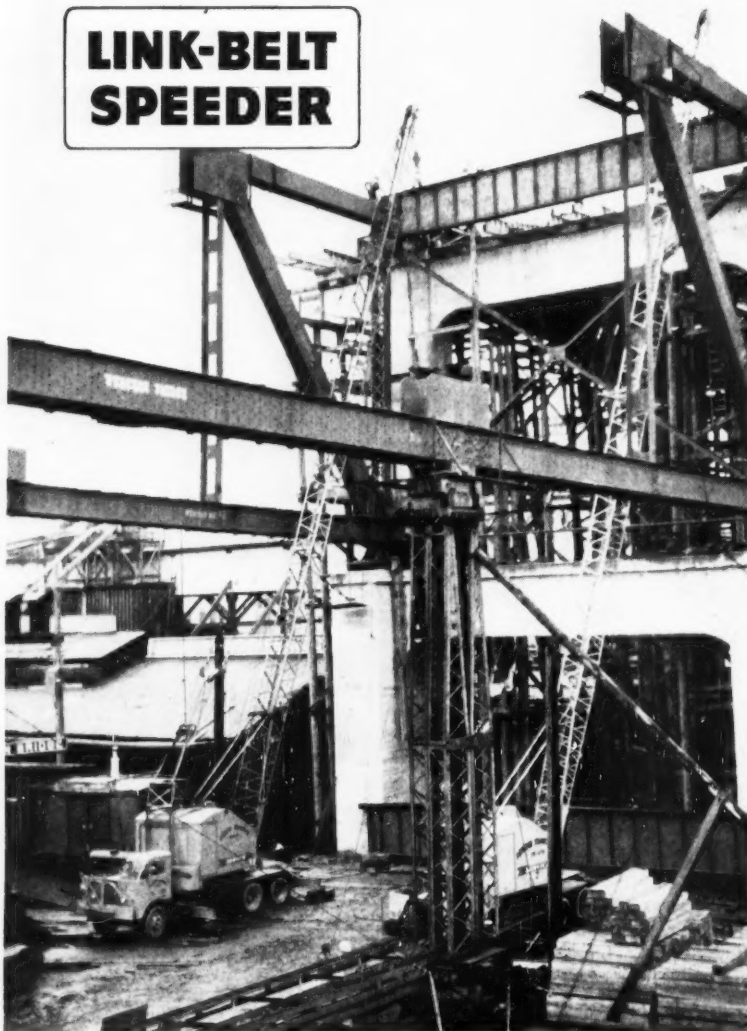
**NAME THE DATE...  
YOUR DEALER  
WILL DEMONSTRATE**



**Before you buy a Truck-Crane:**

# Check safety, mobility!

## LINK-BELT SPEEDER



These two HC-90's, with 80-ft. booms, speed a steel erection job in Vancouver, B.C. At times, one of the rigs is equipped with a 90-ft. boom and a 20-ft. jib.

Patented Retractable Gantry is raised or lowered under power in minutes. Raised gantry decreases load on boom, hoist cable and mechanism . . . results in safer operation.

**Link-Belt Speeder HC-51 and HC-90  
Truck-Crane designs assure  
more work per shift,  
greater earnings per job**

TAKE the HC-90 for example: here's a 25-ton capacity rig that has upper machinery specifically engineered to match its extra lifting capacity.

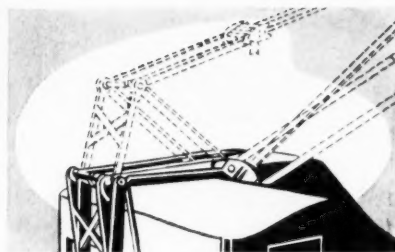
While this special design increases performance and stability, it's only one of the many advantages you get with a Link-Belt Speeder. In addition to rugged all-welded construction and heavy-duty components throughout, there are features such as: patented retractable gantry, hook-type conical shaped rotating rollers and pin-connected hinge-type boom.

Then, too, with ten speeds forward and positive drive to four full-floating rear wheels plus removable rear outriggers, the fully convertible HC-90 travels and works almost anywhere. It's this quick mobility that helps turn small, scattered assignments into real profit-makers.

For details on the 25-ton capacity HC-90, see your distributor or write for catalog 2350. For facts on the 12½-ton capacity HC-51, ask for catalog 2428.

**LINK-BELT SPEEDER CORPORATION**  
Cedar Rapids, Iowa

13, 34



## LINK-BELT SPEEDER CORPORATION

BUILDERS OF A COMPLETE LINE OF CRAWLER, TRUCK AND  
WHEEL-MOUNTED SHOVEL-CRANES

**FACTORY-TRAINED  
DISTRIBUTOR SALES  
AND SERVICE SPECIALISTS  
...EVERYWHERE**



FAMED EDGEWATER BEACH HOTEL in the background was left high and dry by the extension of the Outer Drive in Chicago, so a new lavish pool is being constructed to replace the Lake Michigan beach. Water seepage between concrete joints was a problem.

## Waterstops Water at Chicago Pool



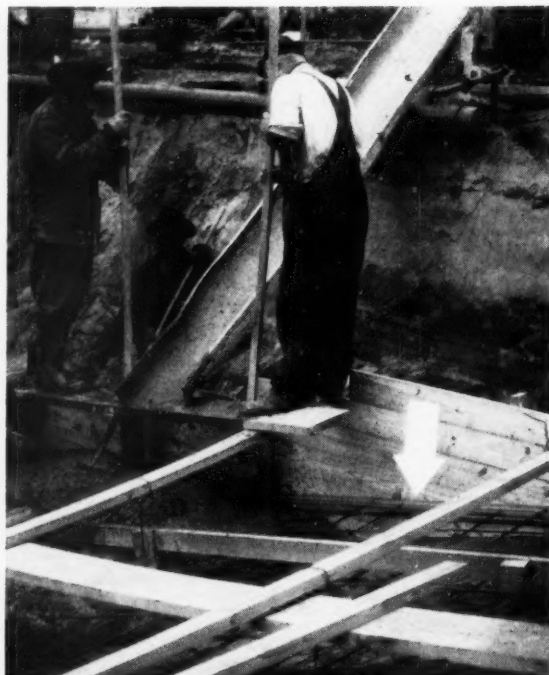
WATER SEEPAGE PROBLEM was eliminated by using Labyrinth Waterstop, a plastic in strips, which is simply nailed to the inside of the form where the joint is to occur.

THE EXTENSION of Chicago's Outer Drive beyond the Foster Avenue cut-off presented not only some social problems but also unusual construction difficulties. The famous Edgewater Beach Hotel was left high and dry without direct access to Lake Michigan beaches due to the extension of the Drive, so the hostelry came up with a brand-new spa of its own, a lavish kidney-shaped pool complete with cabanas. Construction moved along and the facilities were completed just as the summer season opened.

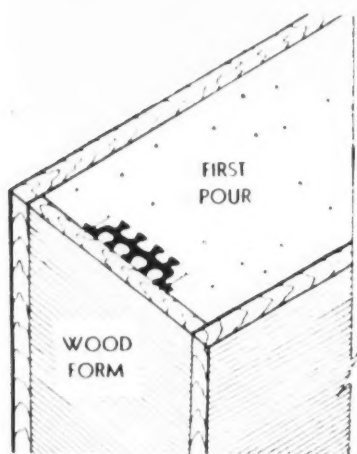
Architects Walton and Walton of Evanston, Ill., and the contractor Algot B. Larson, Inc., had a troublesome problem during the construction of the pool, and as



RIBBED, GROOVED AND CORRUGATED PLASTIC is suitable for either horizontal or vertical joints. It can be cut with a knife, and the sections can be joined with a hot knife or torch.



HERE THE LABYRINTH WATERSTOP is in place (arrow). The special grooves easily fill with concrete with just a touch of vibration or hand puddling. The joint opens and closes for shrinkage.



THIS SKETCH SHOWS the Labyrinth Waterstop in place inside the simple wood form for the first pour. It's nailed to the form.

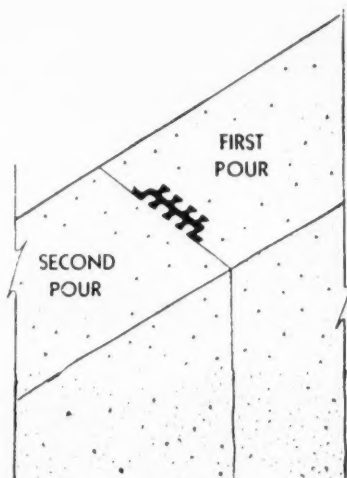
speed was a big factor in completing the job by the opening of the season, it threatened to be serious. Even though the shoreline of Lake Michigan had been moved a considerable distance from the site, the bottom of the pool is well below the water level of the lake. This required positive protection against seepage of ground water into the pool, as well as pool water into the ground.

Copper and rubber waterstops

were first considered, but eliminated. Copper must be brazed or riveted at the joints, and rubber must be vulcanized or cemented together. Both methods are tricky and time-consuming. Used was the new Labyrinth Waterstop, a polyvinyl plastic product being manufactured by Waterseals, Inc., of Chicago, and it looks as if it will do the job.

Installation of this new Waterstop is extremely easy and probably the most outstanding advantage of its use. All that is required of this product, which is made in ribbed, grooved and corrugated strips, is to form a bond with concrete that maintains its seal under the most severe contraction conditions. It is simply nailed to the inside of the form where the joint is to occur and concrete poured around it. Strips can be cut with a knife, and sections joined with a hot knife or torch.

Grooves easily fill with concrete with just a touch of vibration or hand-puddling. Then when the form is stripped, the grooves in the back side of Labyrinth are ready to receive the concrete from the second pour. After the second pour is completed the Labyrinth is interlocked right into the joint, preventing the passage of water. Even after the concrete has hard-



FIRST AND SECOND POURS after forms have been removed, showing how the Waterstop joins the two and seals the joint.

ened, the joint can open and close to allow for shrinkage of the concrete, but still retains enough flexibility to allow for separations up to  $\frac{1}{2}$  in. and remain watertight. It is suitable for either horizontal or vertical joints.

On the Chicago project it was especially helpful in sealing between concrete pours around the curved perimeter of the pool—always a tough problem.



# VELVETOUCH

"known by the  
company it keeps"

**ALLIS-CHALMERS**  
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

**CATERPILLAR**  
TRAU 1 3 DAY 007



**INTERNATIONAL HARVESTER**



**CRANE & SHOVEL CORP.**

**THE HEIL CO.**

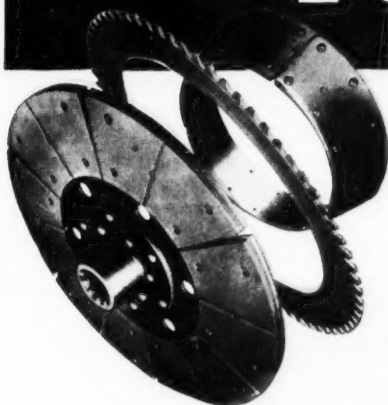


**CARCO**  
WINCHES

**GALION**



**HYSTER  
COMPANY**



*All-Metal*

## CLUTCH PLATES, FACINGS AND BRAKE LININGS

There's one BIG reason why Velvetouch is "standard equipment" with leading manufacturers. And that reason is **DEPENDABILITY!** They know from experience that Velvetouch lasts longer, requires fewer adjustments... because it's all-metal!

Unlike ordinary friction material, Velvetouch is made from powdered metals, compressed and fused to a strong, steel backing plate. As a result, it runs cooler, guards against scoring... can't rot or burn like asbestos. In addition, it cuts chattering and grabbing to give you new operating smoothness.

Insist upon genuine Velvetouch for your next replacements... and you, too, will know why Velvetouch is used and recommended the world over. For further facts, see your supplier, contact our nearest branch, or write—

**THE S. K. WELLMAN CO.**  
200 Egbert Rd. • Bedford, Ohio

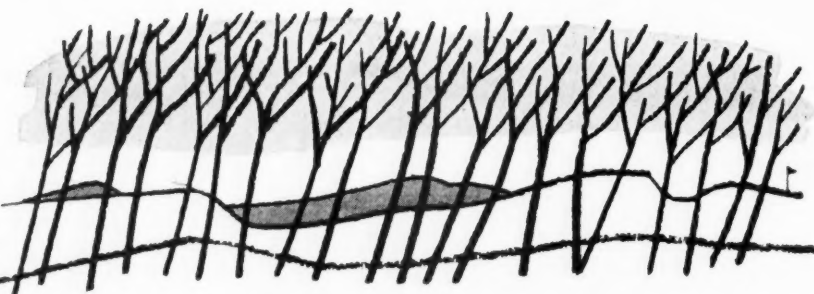
**Velvetouch**

### THE S. K. WELLMAN CO. SALES OFFICES AND WAREHOUSES

- \* ATLANTA 119 14th St., N. E., Atlanta 5, Georgia
- \* CHICAGO 1500 South Western Ave., Chicago 8, Illinois
- \* CLEVELAND 200 Egbert Rd., Bedford, Ohio
- \* DALLAS 3407 Main Street, Dallas 1, Texas
- \*\* DETROIT 16622 James Couzens Highway, Detroit 21, Mich.
- \* LOS ANGELES 1110 South Hope St., Los Angeles 15, Cal.
- \* PHILADELPHIA 1545 West Belfield Ave., Philadelphia 41, Pa.
- \* PORTLAND 836 N. W. 16th Ave., Portland 9, Oregon
- \* SAN FRANCISCO 424 Bryant Street, San Francisco 7, Calif.
- \* TORONTO, ONTARIO The S. K. Wellman Co. of Canada, Ltd., 2839 Dufferin St.
- \*\* WASHINGTON 1101 Vermont Ave., N. W., Washington 5, D. C.

\*\* EXPORT DEPARTMENT—8 South Michigan Ave., Chicago 3, Illinois

\* SALES OFFICE AND WAREHOUSE \*\* SALES OFFICE



## How will you score on your next bid?

Your bond rate could be the deciding factor in your next bid. If you can beat competition on this vital point, you'll stand a much better chance of landing the job.

To have the advantage of a low, preferred bond rate, ask your Indemnity Agent to establish your credit line with Indemnity Insurance Company of North America—the largest independent company—which offers the lowest bond rates\* to contractors of skill, integrity and responsibility.

By establishing your credit line with Indemnity, you make sure that no one will be able to underbid you on this important item. You save money at Indemnity's low rates, and you can be sure of getting bonds on future jobs without delay.

See the Indemnity Agent now. He'll be glad to answer any questions as to how you may qualify for Indemnity's credit line.

\*Indemnity's low rates are not available in Louisiana and Texas.

### INDEMNITY INSURANCE COMPANY OF **NORTH AMERICA**

One of the North America Companies, which are headed  
by Insurance Company of North America, founded 1792

Philadelphia 1, Pa.



**PROTECT WHAT YOU HAVE®**

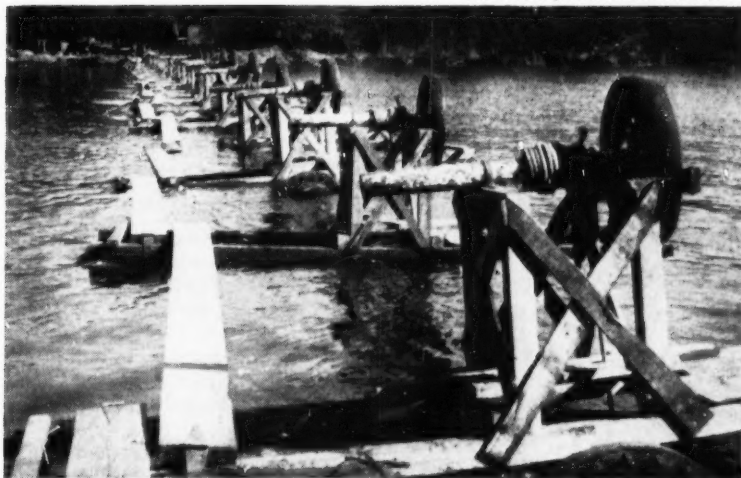
Pioneers in Protection—Serving with 20,000 Agents in the Public Interest



THIS 415-ft CEDAR RIVER CROSSING at Des Moines, Iowa, was made with the help of old axles, wheels and tires, plus 50-gal oil drums lashed to a wooden frame.

## Old Axles, Wheels, Tires...

Photos courtesy American Cast Iron Pipe Co.



EACH WINCH made from the old axles, wheels and tires supported one length of pipe. When the pipe was lowered, it was done by a crew of men working in unison.

## Make Pipe-Lowering Winches

THEY SAY "necessity is the Mother of invention" and contractor Bill Curphy Co., of Des Moines, Iowa, really gave birth to an ingenious method of floating and

lowering a 24-in. water line to the bed of the Cedar River on a 415-ft crossing job he had last year. Of all things he made use of some old axles, wheels and tires that helped

THE SIMPLE WAY  
TO SHORE LOADS  
UP TO **9,900** LBS.

Put Up  
Safway  
Shoring  
in **2**  
EASY  
STEPS



STEP 1

Extend upper member of Safway shoring close to approximate height. Fasten with pin.

STEP 2

Rotate sleeve nut to elevate head to exact height.



● It's microadjustable to exact height. Sleeve turns  $\frac{1}{4}$ " per turn. Each thread is tested to 40,000 lbs. Threads are protected against rust and damage.

● It has up to 9,900 lb. capacity for 7-foot length... a safety factor of 3 to 1. In most cases you need no bracing up to 12 feet and then at greater heights you can use standard Safway tubular steel pivoted cross braces, or lumber.

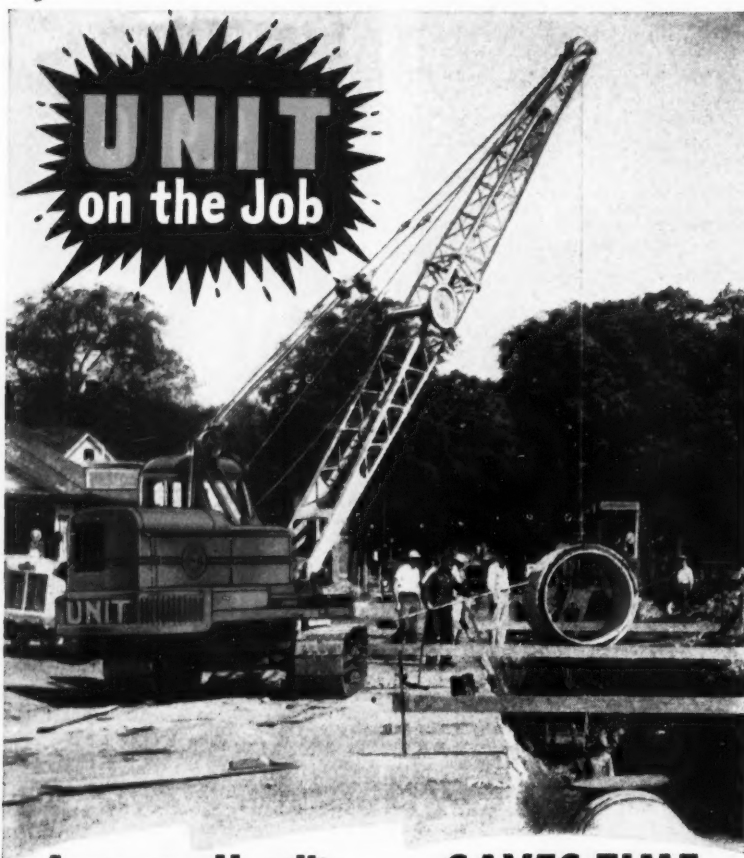
● Just 3 shore sizes cover a complete range from 6 to 15½ feet. Each size has a 5-foot adjustment range. Collar centers upper tube and maintains the load directly overhead. There are three types of heads available for a variety of service conditions.

Why not write today for more facts? Or contact one of the 137 Safway dealers near you.



**SAFWAY**  
STEEL PRODUCTS, Inc.  
6243 West State St.  
MILWAUKEE 13, WISCONSIN





## Accurate Handling... SAVES TIME

This sturdy UNIT Crawler Crane offers plenty of power plus accurate control. Spots heavy sewer pipe perfectly into the desired position. Adjustable Hook Rollers, Extra Long Crawlers and Wide Multiple Hinged Crawler Shoes provide all-around stability. Full Circle Swing, controlled from within UNIT'S FULL VISION CAB, provides safe and efficient operation. The operator has a complete view of the entire job at all times. GET THE FACTS! Investigate this modern UNIT and its many features. Write today for literature.

**UNIT CRANE & SHOVEL CORPORATION**  
6305 WEST BURNHAM STREET • MILWAUKEE 14, WISCONSIN, U. S. A.



**1/2 or 3/4 YARD EXCAVATORS...CRANES UP TO 20 TONS CAPACITY  
CRAWLER OR MOBILE MODELS... GASOLINE OR DIESEL**



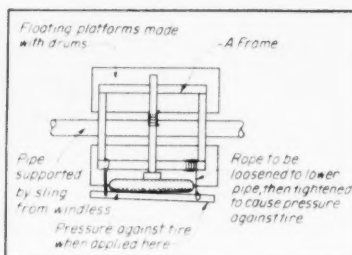
**All Models Convertible to ALL Attachments!**

## FLOATING WINCHES . . . Continued

him do the job slicker than a whistle.

The actual line itself was Molox Ball Joint cast iron pipe furnished by the American Cast Iron Pipe Co. and it required 26 lengths of pipe to make the crossing.

The contractor timed his construction progress on the pipeline which was to connect the filtration plant to the west half of the city, so that he could lay the river crossing section during the fall months when the river flow was the least. A dam downstream formed a pool in this area so that the depth of water was constant at 12 ft.



ON EACH FLOAT supporting a section of pipe a rope was passed under the pipe and then wound over a winch on the wooden frame. The fire acted as a snubber to lower the pipe.

A channel 5 to 6 ft wide and 6 ft deep was dredged across the stream by a combination of sand dredge and slip-scoop. Two cranes, one on each side of the river, were used to drag the sand scoop across and back.

### Pipe Dozed Into River

The first length of pipe was sealed on one end by a blank flange, and the pipe was then placed in line on the river bank over a runway formed by two parallel 8-in. pipe sections embedded in the river bank. As each joint was bolted together a bulldozer shoved the pipe out into the stream which was floated by a wooden frame to which were lashed six 50-gal oil drums. A cable suspended across the river served to guide the pipeline which was permitted to bow upstream about 8 ft in the center of the river. One of these floats on each section of pipe was connected by a rope passed under the pipe and wound over a winch on the wooden frame. These winches were fashioned from old truck axles and wheels with a rubber tire on one end to act as a

*(Continued on page 108)*

***It combats the chief cause  
of excessive engine wear! That's why  
Sam Braen, Inc. uses***

# SHELL ROTELLA OIL



EARTH-MOVING equipment leads a hard life, and none but the *best* heavy-duty oils can be counted on to give adequate engine protection.

And that is why Sam Braen, Inc. . . . of Wyckoff, New Jersey . . . prefers Shell Rotella Oil. Like other leading operators of heavy duty diesel and gasoline equipment, this company has found that modern, fortified Shell Rotella Oil keeps engines working longer between overhauls.

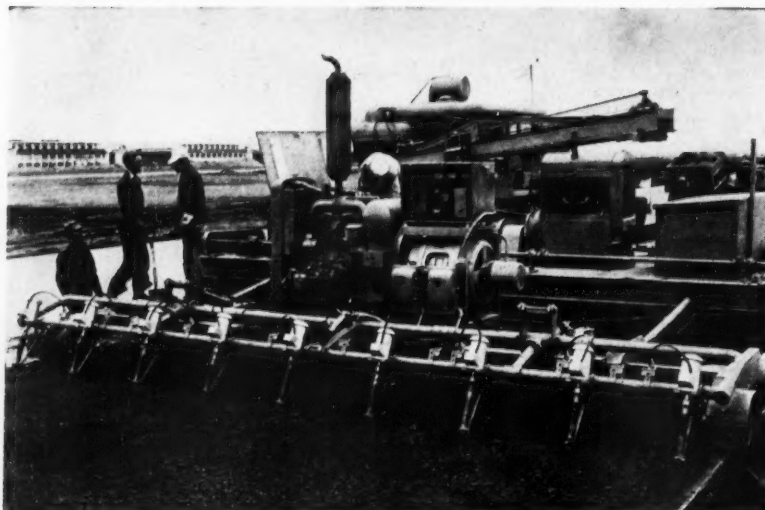
Shell Rotella Oil's anti-corrosive action fights one of the chief causes of excessive engine wear—cylinder and piston ring corrosion

caused by acidic products of incomplete combustion which occur at low jacket temperatures and with intermittent loads.

And Shell Rotella Oil features extremely effective detergent-dispersant action for reduction of harmful deposits. Drainings in severe service are black—proof that engine deposits are being eliminated in the oil.

If you want the latest information on modern methods of lubrication maintenance—for *any* equipment you operate—write Shell Oil Company, 50 West 50th Street, New York 20, or 100 Bush Street, San Francisco 6, California.





**FULL DEPTH INTERNAL SLAB VIBRATOR** easily handles low slump concrete in heavy slab pavements required in modern airport construction.

## Paving Vibrator Speeds Low Slump Airport, Highway Jobs

**FERGUSON-VIBER** full depth internal slab vibrator handles  $\frac{3}{4}$  inch to 1 inch slump concrete in 20 inch slabs on Nebraska airport paving job.

To speed laying high strength uniform slabs up to 20 inches deep, using  $\frac{3}{4}$  inch to 1 inch slump concrete, Abel-Dobson and Robinson of Lincoln, Nebraska, use 2 FERGUSON-VIBER full depth internal slab vibrators on their 340,000 cubic yard job at Lincoln Air Force Base, Nebraska. Thorough vibration makes it easy to handle a mix so dry it can be finished without delay. This keeps length



**UNIFORM VIBRATION** is assured for full width and depth of slab. (Note change in concrete after vibration). One man operates all hydraulic and electric controls.

of the equipment train down to a minimum and permits better supervision of working crews. These FERGUSON-VIBER paving vibrators were furnished complete with nine electrically driven three inch vibrators, an engine driven generator, and all control equipment mounted on an adjustable width framework towed by the spreader. They will handle any slab depth now designed.

The FERGUSON-VIBER full depth internal slab vibrator manufactured by Shovel Supply Company, Dallas, Texas, is based on an original VIBER design used successfully on airports and highways in the United States and abroad since 1943. It is another example of the progressive design and development that keep VIBER a leader in the vibration field. For information on the complete VIBER line of external and rubber-tipped internal vibrators, contact your authorized distributor or VIBER COMPANY, 726 South Flower Street, Burbank, California.

Dept. 68

## FLOATING WINCHES

... Continued from page 106

snubber or brake (see drawing).

After the 26 lengths of pipe were fully connected and floated into proper place over the dredge trench, a crew of men operated the winches in unison and slowly and carefully lowered the pipeline into place. Soundings were made to determine if the pipe was in place in the trench and a jet pump was used to jet sand under the pipe to properly bed and then cover it.

After the pipeline was sunk in place, but before the end connections were installed, the section was tested with air. Both ends were sealed and air was pumped into one end through a connection in the blank flange. One joint was leaking but this was quickly repaired by a diver who merely tightened the bolts at this joint.

V. L. "Shorty" Pyland, superintendent for the Bill Curphy Co., devised the job-designed floats and winches which proved to be both a practical and extremely economical method of floating and sinking pipe into position. In charge of the project for the Cedar Rapids Water Department was C. M. O'Day, field and designing engineer.

**SUPERIOR-  
LIDGERWOOD-MUNDY  
CORPORATION**

*The First Name in*

**Hoists  
Carpullers**

to learn more about this quality hoisting equipment, write for bulletin H 414

**SUPERIOR-LIDGERWOOD-MUNDY  
CORPORATION**

MAIN OFFICE AND WORKS  
SUPERIOR, WISC.

New York Office  
7 Dey Street, New York, N. Y.





UNITED PRESS PHOTO

# BUILDING WITH EXPLOSIVES

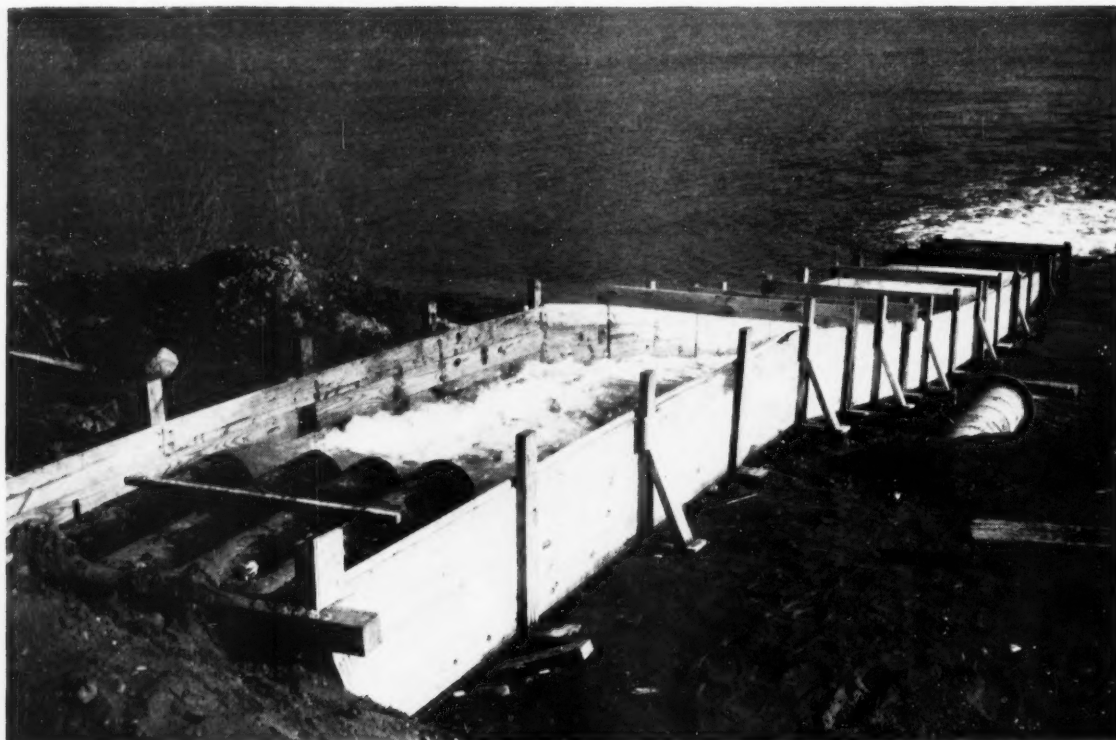
Hoover Dam is an outstanding example of the many large construction projects which Hercules explosives have helped to build. The use of explosives on such projects calls for thorough understanding of the rock formation, selection of the correct explosives to shoot the rock, and adequate facilities to supply explosives on schedule. Our Contractors Division has complete technical and cost data on the use of explosives in any type of construction. Hercules also has service facilities to help you in solving mining, quarrying, and petroleum problems involving explosives.

## **HERCULES POWDER COMPANY**

*Explosives Department, 974 Market Street, Wilmington 99, Delaware*  
Birmingham, Ala.; Chicago, Ill.; Duluth, Minn.; Hazleton, Pa.; Joplin, Mo.; Los Angeles, Cal.; New York, N. Y.; Pittsburgh, Pa.; Salt Lake City, Utah; San Francisco, Cal.



XR53-3



TORRENT OF WATER from four 10-in. discharge lines cascades down a wooden sluice box into the Hudson River as big centrifugal pumps remove some 300,000,000 gal of water from a large abandoned pit to form a natural drydock for pier sections.

## Barge-Mounted Pumps Drain Large Drydock



BATTERY OF FOUR Marlow Pumps on skids rested over deepest part of lake on a barge which lowered as water receded and kept short intake lines in water at all times. Continuous operation for 15 days called for good shelter for operators, hence heated shack.

LARGE-CAPACITY PUMPS made short work of making a natural drydock out of a former clay pit, filled with water. It all happened at Grassy Point, on the banks of the Hudson River, as part of the preparatory work for construction of reinforced concrete foundation "boxes" for deep-water piers of the Nyack-Tarrytown Bridge.

The abandoned pit was 2,100 ft long, 650 ft wide and the water was some 42 ft deep—which had to be removed so construction could proceed on the dry ground. Following construction, the pit again will be flooded and the structures floated to the bridge site for the New York Thruway crossing of the Hudson.

Merritt, Chapman & Scott, general contractor, mounted four 10-in. Marlow self-priming centrifugal pumps side by side on a barge riding on the pool, with suction lines only a few feet long. Discharge lines 265 ft long, with flexible couplings and supported by pontoons, carried the water.

Each pump was operated continuously for 15 days, and a total of more than 300,000,000 gal were removed. The power plants were Waukesha 61-hp water-cooled gasoline engines.

**Hundreds of users say —**

# Adams "550" Motor Grader

**does more work than other 100 H. P. machines**



## *Here's Why—*

- Engine is Set to Deliver Full Advertised Horsepower.
- Grader has Enough Weight on Driving Wheels to use Horsepower.
- Engine has Good Lugging Ability—Hangs on to Load.
- Grader is Easy to Handle.
- Grader Works Faster Because Operator Has Choice of 8 Speeds.
- Grader Maneuvers Faster Because of High Transport Speed—25 M.P.H.—and 4 Reverse Speeds—up to 13 M.P.H.

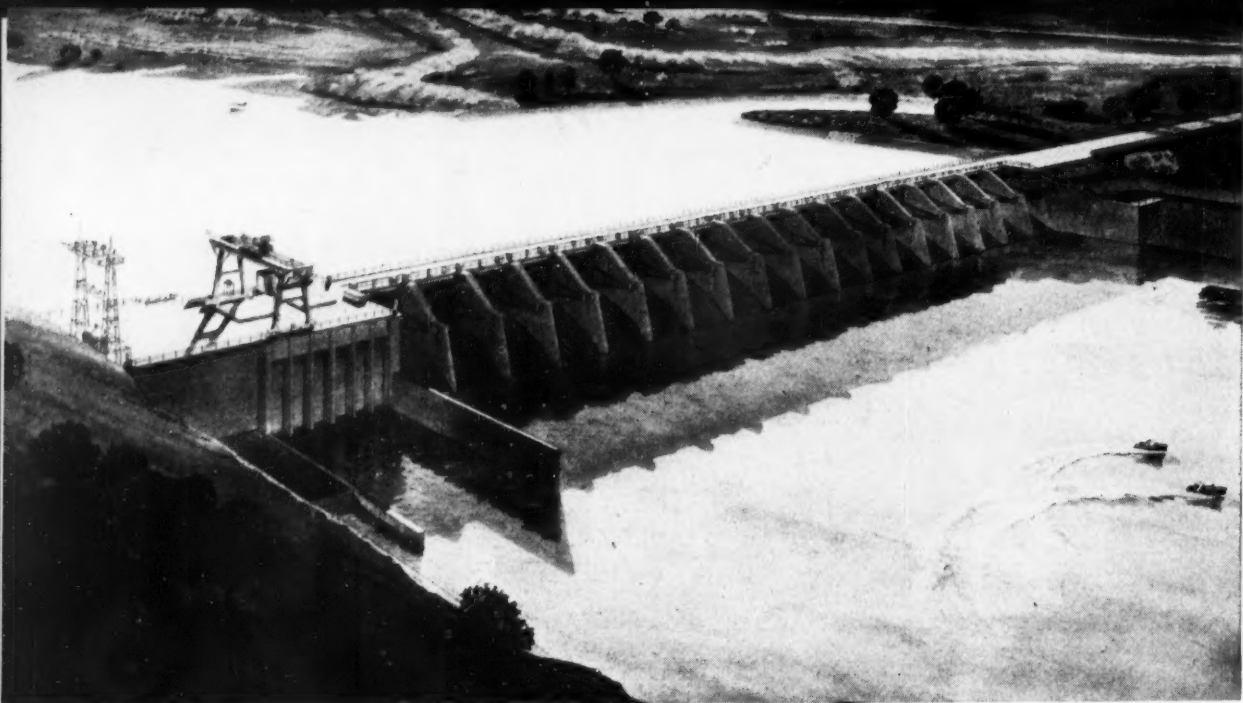
J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, IND.

**Let Your Local Adams Dealer Demonstrate These Facts. Phone Him Today!**

*Make your next  
motor grader an*







**Bureau of Reclamation's Nimbus Dam** near Sacramento, California, now under construction by Winston Bros., is scheduled for completion in 1954. Materials include 118,590 cu yds of concrete, and 2,110 tons of reinforcing steel. On long jobs like this,

specifications stay open, hence your need for consistent sales calls. METHODS can help make those sales calls. Last year METHODS delivered, on the average, 3816 sales messages each month to Winston men — an impossible personal selling task.

## IN A 12-MONTH PERIOD WINSTON BROS. SPENDS \$8,500,000 FOR CONSTRUCTION MATERIALS, EQUIPMENT, AND PARTS

Winston Bros. Company of Minneapolis, Minn., used over 400 construction machines valued at \$4.7-million, to complete \$72-million of construction in 1952. They also spent during the same period \$5,306,900 for construction materials and supplies.

Winston Bros. operated in eight states, plus Canada, and Colombia, South America doing mostly heavy engineering and construction projects. Projects included a dam embankment and spillway, powerhouse, highways, and bridges in California...

**Part of \$4.7-million worth** of Winston's construction equipment used on multi-million dollar Ridge Road Highway in California. Last year spare parts worth \$1.4-million were used by Winston's maintenance crews to keep 204 trucks, 71 bulldozers, 40 scrapers, 22 power shovels, 23 compressors, 16 graders, 12 hauling units, 12 rollers, 9 transit mix trucks, and 3 rooters in working condition.





**Some of the 7,343 tons of steel** bought by Winston Bros. last year now installed as trusses at Belton Dam Outlet Works, Belton, Texas. In addition, they used 191,376 bbl of cement, 3,310,984 bd ft of lumber, 380,577 ft of wire rope, 4,055,813 gallons of gas and oil, 1,100,000 gallons of asphalt, 184,000 lbs of grease, 1,514 truck, tractor, and auto tires, 188,250 lbs of welding rod, 750 batteries, plus miscellaneous items; total cost \$5,306,900. That's how much one multi-million dollar contractor spent in one year for materials and supplies. And last year there were 2,112 contractors who each received over \$1-million worth of construction contracts.

mine shafts in New Mexico . . . reservoir, pressure tunnel, canals, and penstocks in Colorado . . . railroad construction in Texas and Kansas . . . dam outlet works and bridges in Texas . . . harbor dredging, canals and highways in Colombia, South America.

Assembling the right equipment and materials at each project was the exacting job of Winston's 125-man supervisory staff. To do this, they purchased \$5-million worth of materials and \$2-million worth of equipment through three company offices, plus individual project offices.

If you want to sell Winston Bros., your salesmen must get to know and make sales calls on Winston's 125-buying influences as they move from job to job. And what holds true for selling Winston also holds true for selling other contractors. **CONSTRUCTION METHODS AND EQUIPMENT** can help your salesmen by delivering your sales message each month to 24 Winston men in 18 locations, in five states, plus over 33,000 other important buying influences in 48 states and overseas. Consistent advertising in **METHODS** is an inexpensive, effective sales tool.

For more facts on contractor material and equipment needs, how they buy, what they read, write **METHODS** today. Also ask about 24 Readex Reader Interest Reports; many of our advertisers have used them as aids in preparing advertisements for the construction market.



**Hard-to-reach buyers** of construction equipment, parts, materials and supplies are scattered through remote projects like the one shown below, where Winston crews pour the concrete piers for Flatiron penstocks on the \$150-million Colorado-Big Thompson project — and at Whittier Narrows Dam (above) where the spillway structure is shown under construction. Because of paid circulation, **METHODS** follows the subscribers. 24 Winston men in 18 locations in five states get **METHODS** every month: president, project manager, engineers, superintendents, foremen and others. Figure the cost in salesmen's time to reach all these buying influences each month!



# CONSTRUCTION

## METHODS AND EQUIPMENT

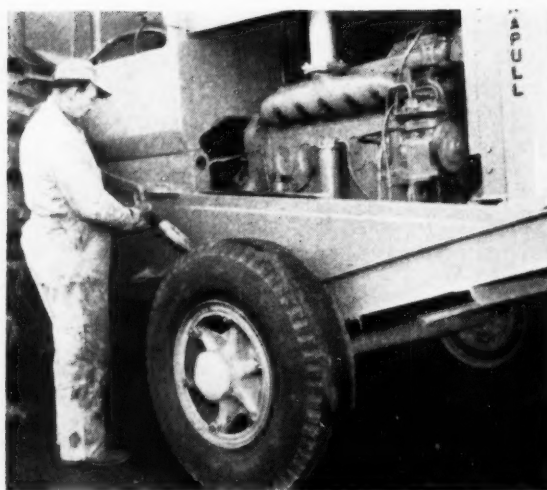


A MCGRAW-HILL PUBLICATION  
330 WEST 42nd STREET, NEW YORK 36, N.Y.





**TWO-WHEEL ROADING AXLE**, which can be purchased or built, slips under the nose section of Model C or Super C Tournapulls and will transfer 9,000-lb weight from driving axle.



**FRAME IS CONNECTED** to the pull hooks by means of turnbuckles. The roading axle is placed 73 in. in front of the driving axle to meet most state requirements.

## Build or Buy This Roading Axle

**DURING THE PRESENT** drive on overweight trucks and other vehicles, some states have caused costly delays to owners and operators of D Roadster and C Tournapulls by requiring weight and width permits.

An Illinois earthmoving contractor, and a LeTourneau-Westinghouse distributor, Illinois Contractors Machinery of East Peoria, Ill., have overcome this obstacle by building a 2-wheel roading axle, which transfers weight from the

driving axle to the roading axle, to slip under the front end of a C Tournapull. It's constructed so simply that contractors could build one, or, if time doesn't permit, it can be purchased.

The drawings on page 117 give a general idea of the construction of the rig. The original axle consisted of a frame bolted to an axle with 9:00x24, 10-ply tires. The frame was built around the nose section, to insure a good fit. It was connected to the prime mover by

means of chains attached to the pull hooks of the prime mover and also by bolts through the frame.

In the construction of the original unit, when mounted, the axle was placed 73 in. ahead of the drive axle. This was to meet the Illinois state requirement that axles must be spaced at least 72 in. apart to be considered as independent weight-carrying axles. It would be well to check local state requirements if contemplating the construction of

*(Continued on page 117)*



**FIELD TESTS** show the roading axle has worked out successfully. Weight tests proved that it reduces the drive-axle weight to approxi-

mately 15,500 lb. The wheels do not turn on the roading axle, but are swung sideways by a pivot action.

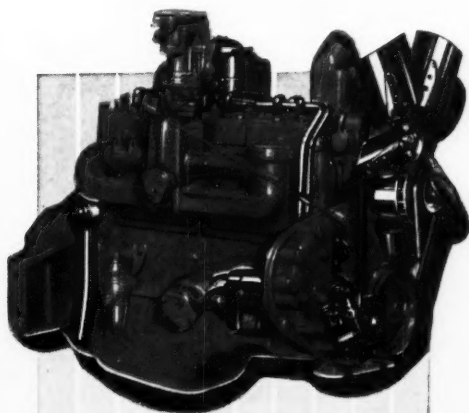


**MIXED WELL  
BEFORE USING**



*Photo courtesy Chain Belt Company, Milwaukee, Wisconsin*

***Chrysler Power and  
gýrol Fluid Coupling  
help remove work and  
jerk from transit-mixing . . .***



Chrysler Industrial Power pumps water, digs ditches, harvests grain, cuts lumber and . . . mixes cement. And very well too. Construction people claim the mixing action of this seven-yard truck mixer is extremely efficient and its charging and discharging speeds excellent, even with coarse mix.

From its position at the rear of the Rex Roto-Mixer, the 230 cubic inch displacement Model 6 Chrysler Industrial Engine supplies ample power for the mixing mechanism. At the same time, Chrysler gýrol Fluid Coupling protects mixer, engine, clutch and transmission from the life-shortening wear imposed by the combination of heavy payloads, sudden starts and stops. Prevents stalling too.

This is simply Chrysler Industrial Power doing a specialized job better because the engine was

selected and equipped to meet the requirements of this particular job. The manufacturer—like every other—chose from a great number of Chrysler options. Among them: gasoline, natural gas or liquid-propane burning carburetors, 3, 4 or 5 speed transmission, standard or gear-driven front ends (with magneto or hydraulic pump drive), twelve or twenty-four volt electrical systems.

Chrysler offers ten power-proved industrial engines for your consideration. They are not expensive because Chrysler production-line methods allow us to mass-produce custom-built engines and sell them at mass-production prices. See the nearest Chrysler Industrial Engine Dealer for complete details, or write: **Dept. 98, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.**

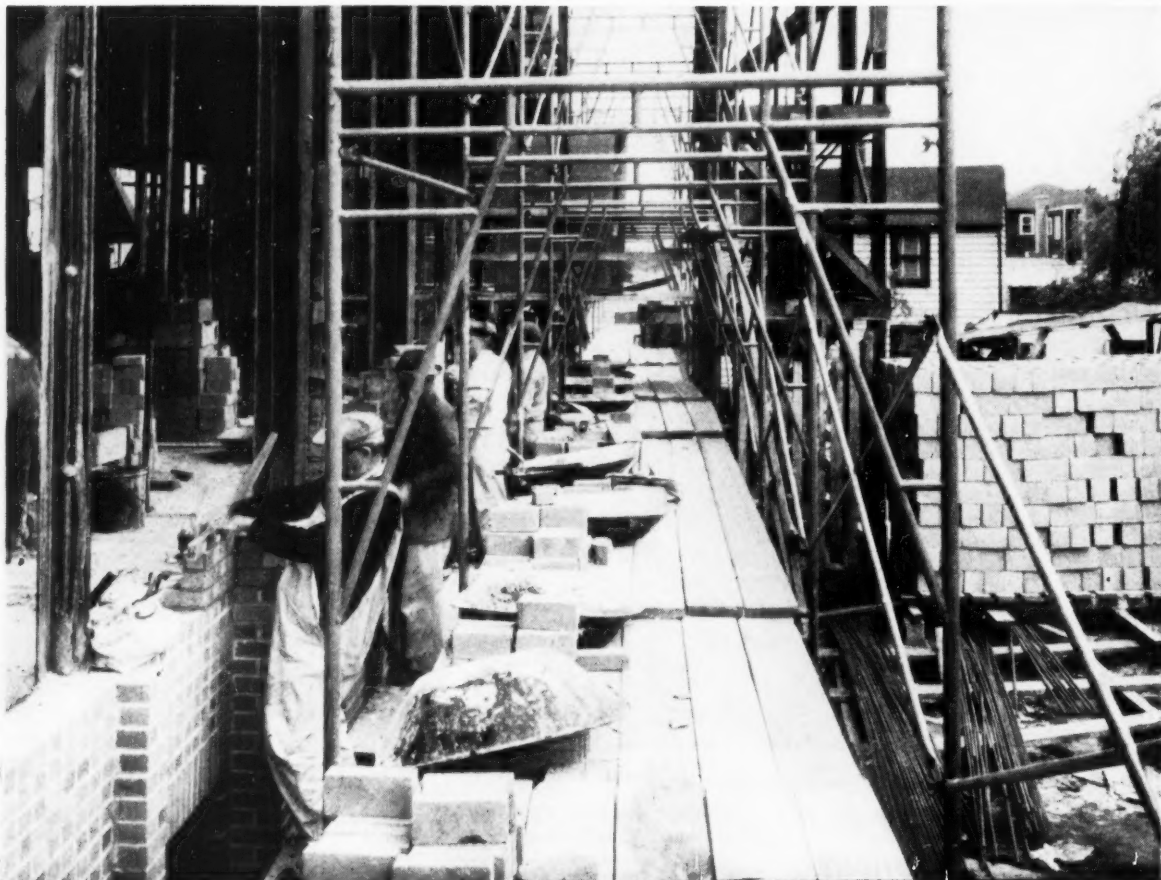
***CHRYSLER***  
***Industrial Engines***

HORSEPOWER



WITH A PEDIGREE

# "TROUBLE SAVER"® Sectional Scaffolding



SAFE SCAFFOLDING to fit the job is easy with "Trouble Saver" Steel Scaffolding. Safe, positive wing nuts are used to fasten the

pivoted double-diagonal braces to prefabricated steel frames. It's reusable on job after job.

## This Scaffold Gives Walkroom and Workroom

ON THIS MASONRY JOB it was important to get mortar and brick from the hoist to several masons quick and easy—and, at the same time, not interfere with their work. PS—Patent Scaffolding Co., did it with "Trouble Saver" Sectional Scaffolding, using 6'1" high frames that give plenty of headroom for

delivery of materials while providing a 5'-wide platform to hold them.

The masons work on a separate-level 20"-wide platform laid on easily-adjusted sidewall brackets that can be set at varying heights on the "Trouble Saver" Scaffolding frames. This simple and safe method puts the materials in handy

reach, and the man at most convenient working level.

It all adds up to saving time and money because "Trouble-Saver" Scaffolding "fits" the job, yet is easy and economical to erect. It's also another example of how PS Co. can solve *any* job problem you have—because PS has *all* types of modern scaffolds.



Distributed by:

*For Greater Safety...Efficiency...Economy*

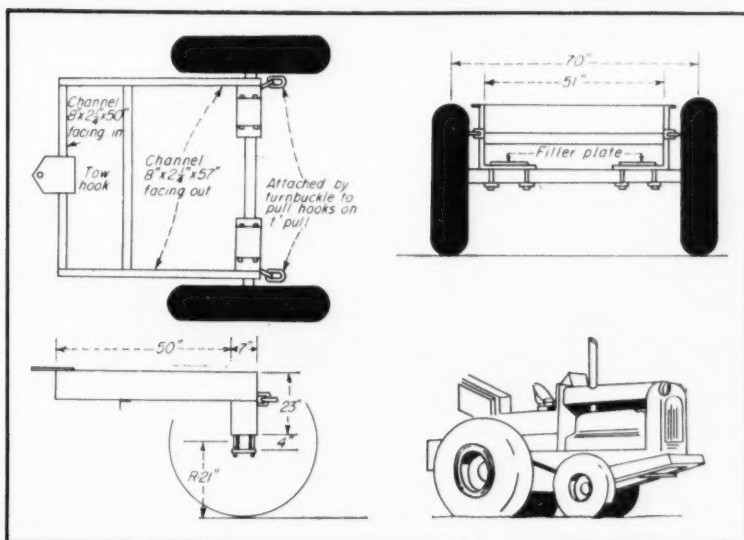
**THE PATENT SCAFFOLDING CO. INC.**

38-21 12th St., Dept. CM&E, Long Island City 1, N. Y.

6931 Stanford Avenue, Los Angeles, Calif.

Offices in all principal cities

PS offers, nationally, a complete engineering service available locally. See the "yellow pages" of your 'phone book for the nearest PS Co. office or representative handling "Gold Medal" Scaffolds.



DRAWINGS show how simple it is to construct this roading axle for either the Model C or Super C Tournapull. For the Super C model it is necessary to attach a timber 15x15x50 in. atop the axle.

a similar-type unit elsewhere.

By bolting on an adapter unit (see drawing), and by attaching a timber 15x15x50 in. atop the axle, the original roading axle was mod-

ified to handle the model Super C Tournapull in addition to the Standard C model.

A second roading axle was built by Illinois Contractors Machinery

which differs only slightly from the original model. The tires are 11:00x20 with a 72-in. gage. The ears were omitted and the frame connected to the pull hooks by means of turnbuckles.

In operation, the roading axle has worked out quite successfully. Weight tests on a C Roadster proved that the roading axle carried approximately 9,000 lb, reducing the drive-axle weight to approximately 15,500 lb. Weight on the axle can be varied by shims between the axle and prime mover.

#### Non-Steering Wheels

The wheels on the roading axle do not steer, but are simply swung sideways by the pivoting action of the Tournapull. If necessary to make a sharp turn, the operator lowers the scraper bowl to take some of the weight off the nose so it will swing more easily.

If you don't want to be bothered by constructing a unit similar to the one described here, but would be willing to pay for one, Illinois Contractors Machinery in East Peoria, Ill., will build you one for \$375. Price includes everything but the tires.

## 5 or 6 INCH AUGERS drill up to 80 feet 4 1/4 INCH AUGERS drill to greater depths

# Parmanco

## MODEL 51V VERTICAL DRILL

### HEAVY DUTY • 4 SPEEDS AND REVERSE

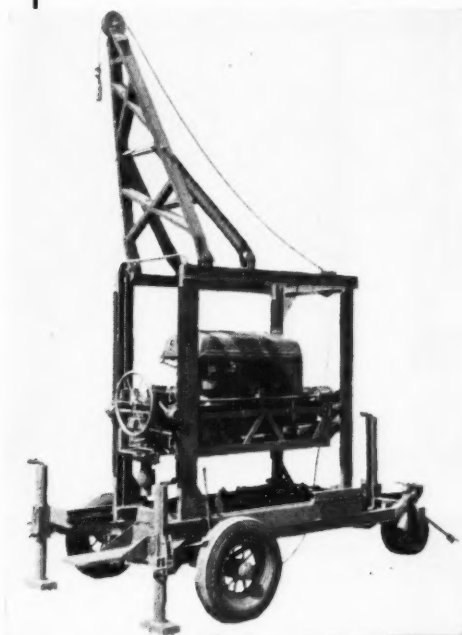
Here is a mobile drilling tool, built around a 40 h.p. Ford motor and to user's conditions and requirements. In use today in many fields, it is speeding and simplifying jobs.

In a recent field test an accurate sample was taken in 30 minutes thru 25 feet of overburden. This was done adjacent to an identical test hole that had taken 8 days to drill and sample by hand.

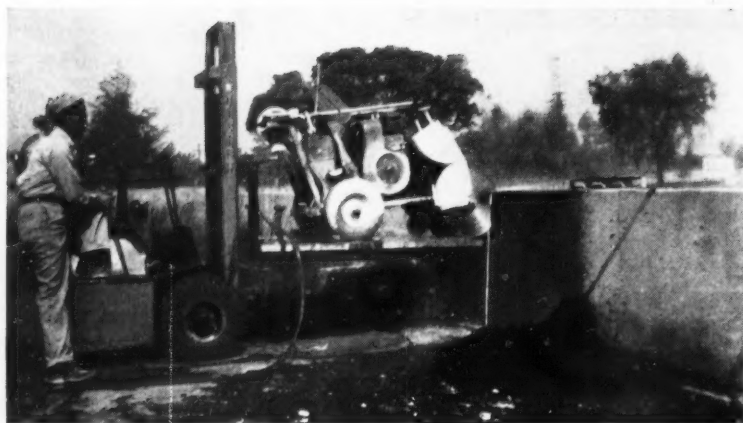
This Model 51V has four auger rotating speeds and reverse. It has proved its ability to meet the requirements of the general prospecting field where it is not necessary to drill solid limestone.

This machine (Model 51WV) is also built around a Wisconsin 25 h.p. air-cooled motor, 4 speed transmission and self-starter.

**PARIS MANUFACTURING CO. PARIS, ILL.**







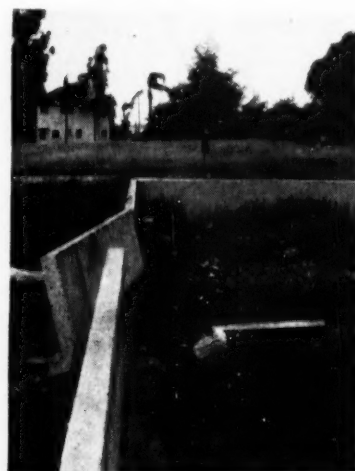
Concrete saw on a lift truck

## Concrete Cutter Gets Lift on Wall Demolition Job

A WEST COAST CONTRACTOR, faced with the problem of demolishing a 240-ft reinforced concrete wall and the reconstruction of a second wall of similar length but at a different location, solved it by the use of a concrete cutter mounted on a lift truck and saved himself \$241 by his ingenuity in salvaging and re-using the original wall.

A Felker DI-MET Model 252 heavy-duty Concrete Cutter with an 18-in. segmented-type diamond blade, was backed on to a Hyster fork lift truck, which provided the vertical speed. The wall 36 in. high and 6 in. thick was cut into nine sections. Total cutting time, including all setups and preparational effort, was approximately 8 hr.

Best estimate on demolishing the old wall and constructing a new one totaled \$991. Actual cost of cutting, moving and resetting the nine concrete sections was \$750—a savings of \$241.



### Actual Cost of ...

CUTTING, MOVING and resetting the cut up sections of this concrete wall amounted to \$750. The 240-ft wall required nine cuts.

# TOUGH

## TAIL CHAINS...

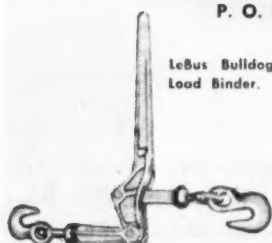
## THEY'RE LEBUS!

LeBus Tail Chains will stretch before breaking, but will not freeze. They must be tough. These Tail Chain links and hooks are made of drop-forged, heat-treated steel which will withstand the roughest treatment, and every chain is guaranteed to stand up under the pull test specified. Check with your engineer; he will verify the superiority of drop-forged chain over ordinary chain. For full specifications and prices, write for catalog page 450.



**LEBUS ROTARY TOOL WORKS, Inc.**

P. O. BOX 2352 • LONGVIEW, TEXAS • PHONE 1232



LeBus Bulldog  
Load Binder.



LeBus Truckers  
Special Snatch  
Blocks.



# Dozens of Uses • Thousands of Users

## Prove Ability, Versatility of the Model D

The thousands of satisfied owners are still finding new uses for the able and versatile Allis-Chalmers Model D Grader. It has proved again and again that it has the power and capacity to do outstanding work on both construction and maintenance.

Usefulness of the Model D is multiplied by several easily mounted attachments: hydraulically controlled rear-end loader, shoulder maintainer that is interchangeable with the loader, scarifier, both V-type and blade snowplows.

### MORE POWER, NEW FEATURES, LOW COST

For even greater performance ability, power for the Model D has been boosted to 40 brake hp. Also, leaning front

wheels and power circle turn now are available (optional). With these and other big-grader features such as tandem drive, ROLL-AWAY Moldboard, tubular frame and hydraulic blade lift — the Model D's original cost still is but one-third that of a large grader. Operating costs are low, too.

Your Allis-Chalmers dealer will be glad to demonstrate what the versatile, economical Model D can do for you.

ROLL-AWAY is an Allis-Chalmers trademark.

**40 Brake hp. • 8,800 lb. (bare)**

**Four speeds forward to 25.6 mph., reverse to 3.3 mph.**



Handles light construction on streets, roadways, etc.



Backfills ditches, packs and levels ground, loads excess dirt to trucks.



Cuts and cleans ditches, slopes banks, grades shoulders.



Loads sand, dirt, snow — any material — to trucks.



Terraces, builds diversion ditches, does miscellaneous grader work.



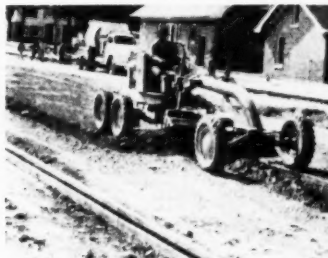
Loads sand, gravel, dirt, any material, with 3-yd. bucket.



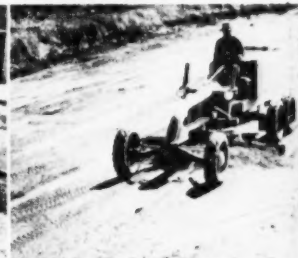
Scarifies, with plenty of down pressure, accurate hydraulic control.



Mixes thoroughly, with rolling action of ROLL-AWAY moldboard.



Finish grades between forms on road and street construction.



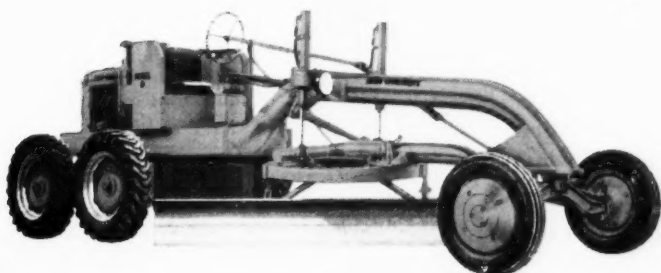
Levels for home building, parking lots, play areas, etc.



Rough grades, spreads and cleans up on street or road construction.



Landscapes, grades lawns, slopes, ditches around housing projects.



- Designed for your jobs
- Built to take it
- Easy to operate
- Easy to service

**ALLIS-CHALMERS**  
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

Ask the man behind the gun . . .

## White gives you everything you want in an engineer's transit



Shown, model 7014 with "A" type standard. "U" type also available. \$575.00\* complete with tripod case and field equipment.

**W**HY are more and more engineers and builders choosing White Engineers' Transits? Basically, the reason is simple: White transits are designed and built for the man in the field. They incorporate all the work-saving, accuracy-boosting features . . . the rugged construction . . . the simplified quality components that you want. In addition, you get coated optics, covered leveling screws and internal focusing Telescope. Wide frame tripod is optional.

### YOUR CHOICE OF THREE RETICULES AS SHOWN BELOW —



Fig. I  
Cross hair  
arrangement for  
our standard  
levels.



Fig. II  
Stadia hair  
arrangement for  
our standard  
transits.



Fig. III  
Special stadia  
hair arrangement,  
furnished  
upon request.

To get the details on the complete White line of instruments for Engineers, Surveyors and Builders, write for Bulletin 1053, DAVID WHITE COMPANY, 343 W. Court Street, Milwaukee 12, Wisconsin.



We offer  
the most expert  
REPAIR SERVICE  
on all makes  
of instruments

\*Prices subject to  
change without notice.

## SALES AND ★ SERVICE ★

News of manufacturers' activities designed to assist the reader in the purchase of machinery, equipment and materials and help him obtain quick service on parts and maintenance.

### Distributor Appointments

**Cleaver Brooks Co.:** Hathaway-McCartney Engineering & Supply Co., 1459 S. Pearl St., Denver 10, Colo., has been appointed exclusive sales agent for Cleaver-Brooks self-contained boiler equipment. Its territory includes Colorado, southeastern Wyoming, western Nebraska and western Kansas.

**Nordberg Mfg. Co.:** Appointment of Gochenaur Marine Co., Philadelphia, Pa., as distributor in eastern Pennsylvania, southern New Jersey and Delaware, for 4FS diesel engines, has been announced.

**Lippmann Engineering Works:** P. A. Ross Machinery Co., 3120 Grand Ave., Dallas, Tex., was recently appointed distributor to handle Lippmann's line of crushing, screening and conveying machinery. The territory covered by this distributor will include north and east Texas. Stockberger Machinery, Inc., 630 High St., Ft. Wayne, Ind., has been appointed distributor for Indiana.

**Cleco Div., Reed Roller Bit Co.:** Has announced the following appointments of distributors for Cleco products in their areas—La Grand Industrial Supply Co., Portland 1, Ore.; The Sidney B. Roby Co., Rochester, N. Y.; Fehrs Tractor & Equipment Co., Inc., Omaha 2, Neb., and J. Pegely and Son Hardware Co., Pottstown, Pa.

**Koehring Co.:** The Tri-State Equipment Co. of El Paso will handle the complete Koehring line of heavy-duty construction equipment along with the products of its subsidiaries—C. S. Johnson, Kwik-Mix and Parsons Companies—in the western Texas area.

**Cummins Engine Co., Inc.:** Cummins Rio Grande Sales & Service, Inc. has been organized to handle the former Albuquerque, N. M., and El Paso, Tex., operations of Cummins & Moran, Phoenix, Ariz. Headquarters for the organization are at 1921 N. Broadway, Albuquerque, with a branch at 600 Cole St., El Paso.

**Joy Mfg. Co.:** Has appointed Olson Equipment Co., 2930 Blaisdell Ave., Minneapolis 8, Minn., as distributor

(Continued on page 123)



## NOW a New principle in REWIND STARTERS

This amazing new Armstrong Starter is packed with important new features — it is 50% lighter — smoother acting — easier to service and mount. The principle is based on the use of friction inside a conventional rope starter cup. Actuated by a cam principle it engages after 1/4 inch pull. Eliminates danger of teeth or pawls breaking — permits greater tolerances in mounting. Available with stationary or rotating screen. Competitively priced.

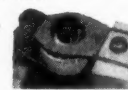
### ARMSTRONG BULLDOG STARTER HERE'S HOW IT WORKS



1. Cam actuated  
teeth extend to  
grip inside of  
standard rope  
pulley cup.



2. Spring loading  
retracts teeth  
when pull stops.



3. Rope pulley  
available for hand  
starting in case  
of emergency.



4. Heart of unit  
can be incorporated  
in end  
products design.

If you make, sell or use  
products like Chainsaws •  
Pumps • Power Mowers •  
Outdoor Motors, you can  
reduce weight — improve  
starting — increase starter  
life.

ARMSTRONG PRODUCTS CO.  
Milwaukee, Wis.

## McKIERNAN-TERRY JOB-PROVEN Pile Hammers

McKiernan-Terry Pile Hammers  
are job-proven and time-tested . . .

the choice of engineers and contractors on major construction projects throughout the world. Available in a standardized line of 11 double-acting hammers, 5 single-acting hammers and 2 double-acting extractors. Write for free Bulletin.

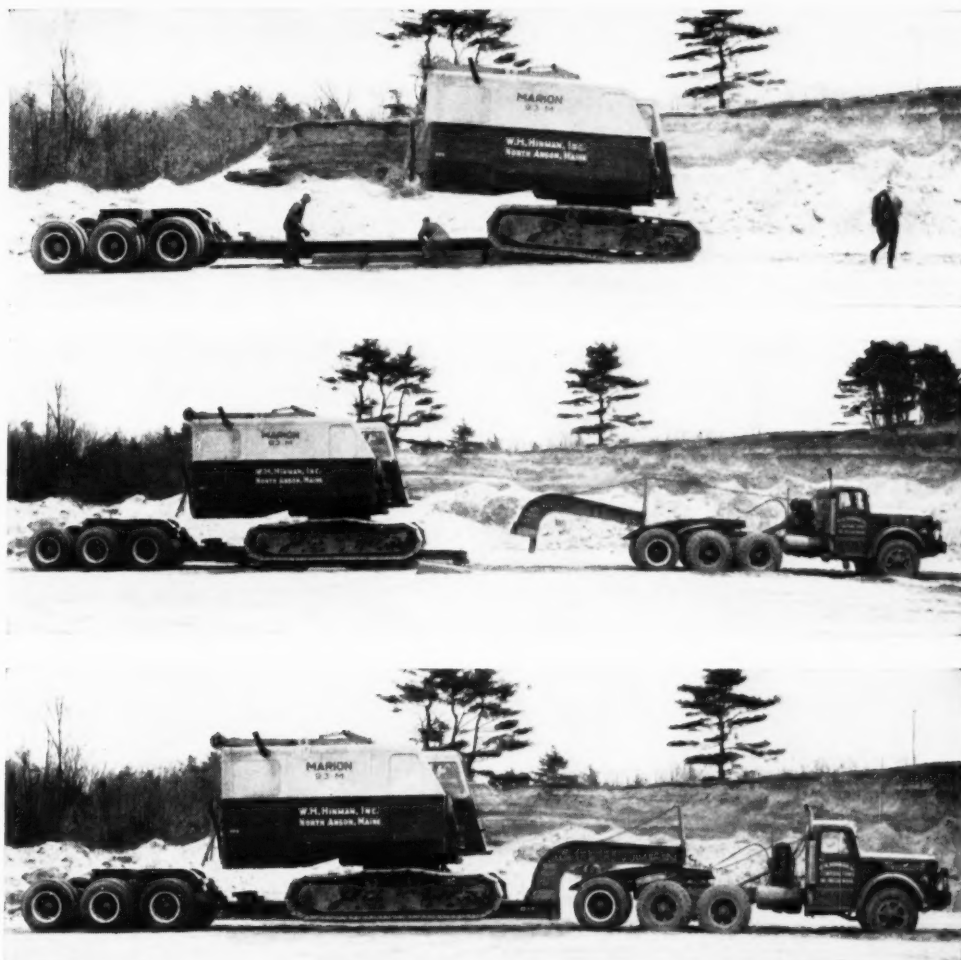
Also builders of coal and ore bridges, bulk material unloaders, bridge operating mechanisms, hoists and marine equipment, and specially designed machinery.



McKIERNAN-TERRY CORPORATION  
MANUFACTURING ENGINEERS  
14 PARK ROW, NEW YORK 38, N. Y.

McK-345



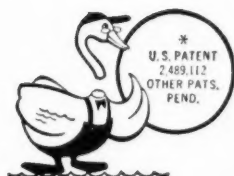


Shown here is a Talbert Beam Deck Trailer, Model T3BD-75-RG-RA with a Talbert Single Axle Dolly loading a Marion, Model 93M. This rig is owned by W. H. Hinman, Inc., of North Anson, Maine.

## SIMPLE LOADING OPERATION

# ...the TALBERT way

Talbert Trailers are designed so as to permit loads of this type to be hauled on the job. The empty weight has been held to a minimum, permitting the contractor to haul up to a yard and half machine legally in the State of Maine.



Write for new Talbert Catalog No. 104.

THE TALBERT CONSTRUCTION EQUIPMENT CO., of Lyons, Illinois manufactures a complete line of low-bed trailers and dump semi-trailers

**THE TALBERT-WAY IS THE EASY WAY**

# BAKER announces a completely **NEW** Power Control Unit

## BAKER PCU-75

**FOR THE OPERATOR**—easier, more positive control with greater accuracy at all speeds.

**FOR THE OWNER**—longer operating life with less maintenance.

**FOR THE SERVICE MAN**—quick, simple adjustments—easy to clean and lubricate

### CHECK THESE FEATURES

**NEW Multiple Disc Clutch**—smoother operating, longer lasting with *higher capacity* than any other type of clutch. Adjustments are more permanent. Shorter lever travel—only 5"—reduces operator fatigue.

**NEW Adjustable Hand Levers**—quickly adjusted by operator for *length, angular position, and height*. New, horizontal swing-action lightens hand load.

**NEW Improved Brakes**—faster on-and-off, easier to control. Single-point adjustment. Rugged, simplified design increases both efficiency and wear life.

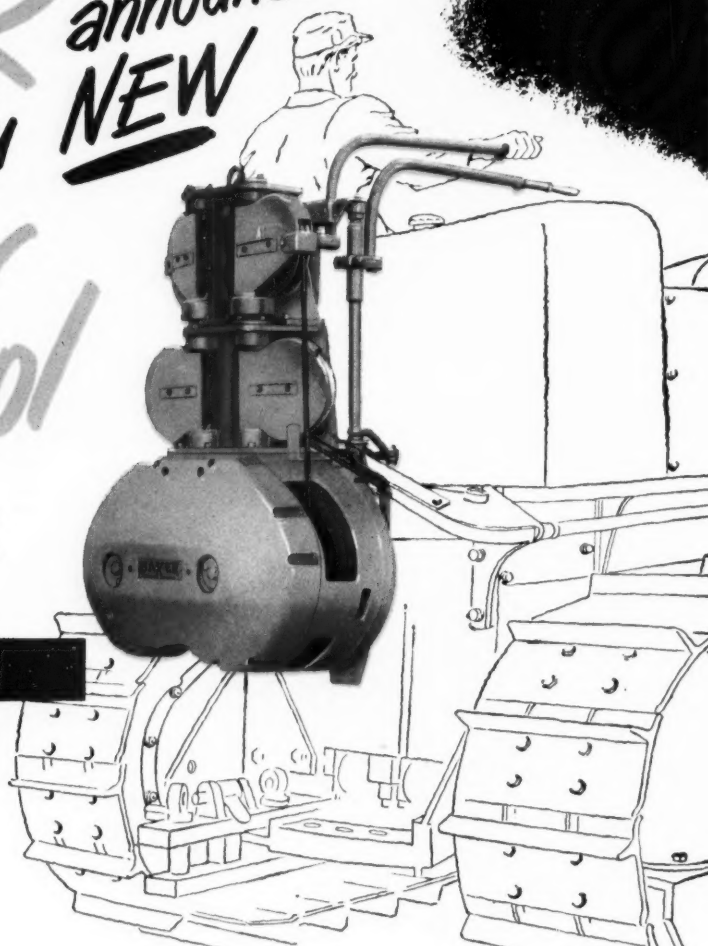
**NEW Sheave Mountings**—upper reeving sheaves pivoted same as lower fairleads and mount-on anti-friction bearings to provide more uniform cable-winding.

**NEW Streamlined Design**—more compact, fewer obstructions. Clutches completely enclosed to keep out dirt, grit, moisture.

**THE BAKER MANUFACTURING COMPANY**  
Springfield, Illinois

Stop in at your local Baker, A-C Dealer today—get full details on the new Baker Power Control Unit No. 75—or write direct to The Baker Manufacturing Company, Springfield, Illinois.

**Always look to Baker for the Next Advancement—FIRST**



## SALES AND SERVICE

... Continued from page 120

of Joy construction equipment for Minnesota.

**Metal and Thermo Corp.:** Announces the appointments of nine new distributors for its line of Murex electrodes, M&T welding machines and accessories. They are—Alaska Welding Supplies, Inc., Anchorage, Alaska; Auto Gas Light & Appliance Co., North Bergen, N. J.; Butler Gas Co., New Brighton, Pa.; Fidelity Sales, Newark, N. J.; Littrell Parts Co., Inc., Reading, Calif.; McKinney Welding Supply Co., New York, N. Y.; Merritt-Holland Supply Co., Wilmington, N. C.; San Antonio Machine & Supply Co., San Antonio, Tex., and Lee T. Staton, Riverdale, N. J.

### On the Sales Front

**Marmon-Herrington Co., Inc.:** Robert V. Cummins has been appointed to head the sales promotion department; Denzil Coffey has been named district manager for the southeastern section of the U. S., and Robert C. Thurman has been appointed district manager of the northeastern section of the U. S.

**Thor Power Tool Co.:** J. A. Hill has been elected vice-president and sales manager and B. H. Jones vice-president in charge of Rock Drill Sales. The Buffalo, N. Y., branch of the company has moved to 735 Military Rd.; a new branch office has been opened in Newark, N. J., at 1 Tichenor Lane; and a branch office will be opened in Atlanta, Ga., on October 1.

**B. F. Goodrich Co.:** Arthur Kelly, a vice-president of the company, has been named president of the newly organized Tire and Equipment Division. Clyde O. DeLong has been named president of the new Industrial Products Division.

**Gumout Div., Pennsylvania Refining Co.:** Frank J. Mahoney has been appointed sales-service representative in the New England territory.

**Kelite Products, Inc.:** Announced the appointment of Richard C. Martin as national sales director. In this capacity he will supervise the company's service offices in 84 cities. He will make his headquarters at the main plant, 1250 N. Main St., Los Angeles.

**Detroit Diesel Engine Div., General Motors Corp.:** Several changes in the assignments of field sales and service personnel have been announced. A. W. Anderson, formerly factory sales representative in the New Orleans sales zone, has been transferred to the Los Angeles area in the same capacity. He is succeeded by Ralph Pontius, former factory service rep-

## NEW Model HUD Disconnecting Hydraulic Power Take-Off ...

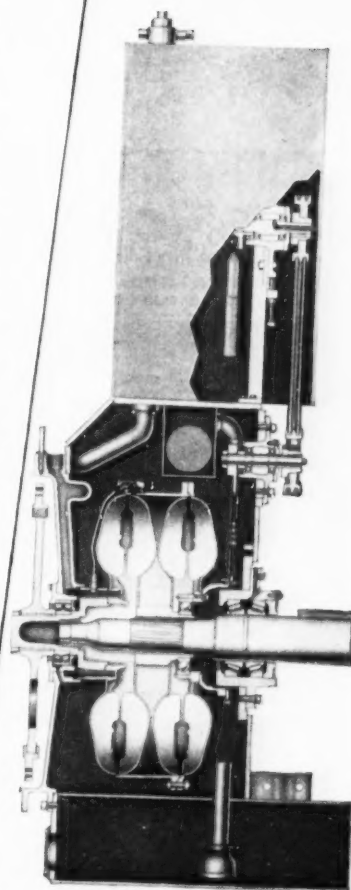
# Reduces Impact Shocks 70%

Doubling wear life on chains, clutches and running parts, drilling rigs equipped with the new Twin Disc Disconnecting Hydraulic Power Take-Offs have been running up outstanding service records during the past two years. Many rigs now drill deeper, more economically, because the new Twin Disc Model HUD allows the full use of peak engine torque ... dampens starting shocks, stopping shocks and overloads. Through the complete Disconnect feature, the HUD acts as a master clutch.

Steady power transmission through Twin Disc HUD softens and controls speeds of acceleration and deceleration ... to reduce impact shock—on power units and driven equipment—by 70% or more. Compounded drives can easily be synchronized—drum clutches can safely be engaged with engines idling, for smoother load pick-up—the range of available mud pump speeds and pressures can be greatly extended. Rig engines, free to run at their most efficient rpm, prevented from lugging or stalling under load, are assured of a longer, more serviceable, trouble-free life.

For complete information on how Twin Disc Disconnecting Hydraulic Power Take-Offs are adding efficiency to modern drilling rigs, contact your nearest Twin Disc Factory Branch, or write to the Hydraulic Division, Rockford, Ill.

Twin Disc Model HUD Disconnecting Hydraulic Power Take-Off—available in coupling sizes 21" and 27"; to handle 60 to 600 hp engines ... operates with either cooling radiator or heat exchanger ... incorporates shortened oil sump to fit rig design.



Built for a Long Life ...

Backed for a Lifetime



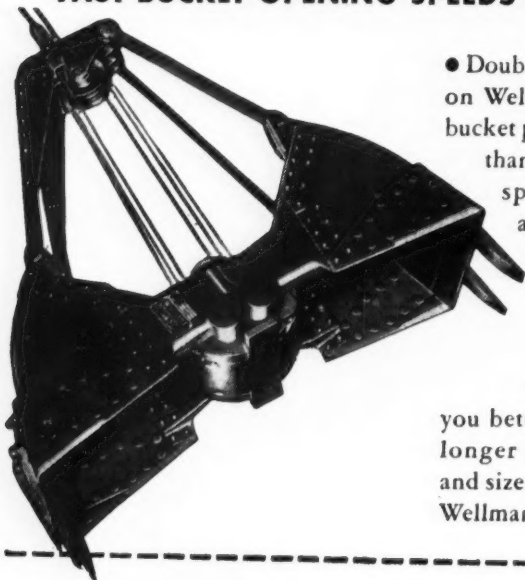
TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TORONTO



# WELLMAN *Williams Type*

## FAST BUCKET OPENING SPEEDS OPERATIONS



• Double-hinge construction on Wellman's multiple-rope bucket permits faster opening than a single hinge. This speeds up operations, also gives a bigger spread in the open bucket for the same headroom.

Wellman's welded-design buckets offer you better performance and longer service. In all types and sizes you'll do better with Wellman!

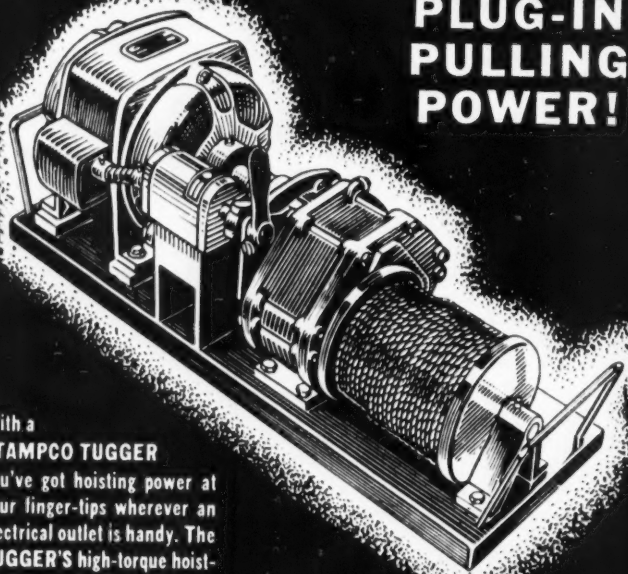
**Want Facts?**

Write for free descriptive bulletins.

CLAMSHELL • DRAGLINE • CUSTOM-BUILT BUCKETS • STONE AND WOOD GRABS

**THE WELLMAN ENGINEERING COMPANY**

700Q Central Avenue  
Cleveland 4, Ohio



**PLUG-IN  
PULLING  
POWER!**

With a **STAMPCO TUGGER** you've got hoisting power at your finger-tips wherever an electrical outlet is handy. The **TUGGER'S** high-torque hoisting motor delivers constant speed to the drum... reverses instantly... Electrically!

One-Man operation A self-liquidating investment!



Write today for complete descriptive catalog

**ST. ANTHONY MACHINE PRODUCTS CO.**  
2452 Franklin Ave., Minneapolis 8, Minn.

## SALES AND SERVICE . . . Continued

representative in the New Orleans territory. Stanley Pillsbury has been assigned to the post vacated by Mr. Pontius. Charles Howell, former Los Angeles area sales representative, has been transferred to the Tulsa sales office. He will succeed E. J. vanDyk who has been transferred to the home office in Detroit as a sales engineering consultant.

**Waco Manufacturing Co.:** Frank X. Mangan has been elected vice-president. In this capacity he will supervise sales of all Waco products through the firm's domestic and foreign distributors, coordinate factory-distributor relations and oversee promotion and training of the company's representatives.

**Shunk Mfg. Co.:** Warren B. Irish has been appointed regional sales manager, representing the company in Ohio, western Pennsylvania and West Virginia. Larry Efaw has been appointed office sales manager, and Oscar C. Geiser has been placed in charge of customer relations for the company.

**Colorado Fuel and Iron Corp.:** A new district sales office and warehouse has been opened in New Orleans, La., by the Wickwire Spencer Steel Div. Ford L. Brooke, who formerly handled sales of wire rope in Louisiana, was appointed New Orleans district manager.

**Union Wire Rope Corp.:** To facilitate the management of its wire rope and sling services, the company has established an eastern division comprising 15 states, including Ohio on the west and Tennessee and Virginia on the south. L. A. Price, formerly district manager at Ashland, Ky., has been appointed division manager; R. D. Tripp, formerly district salesman, will succeed Mr. Price as district manager; L. A. Davis, formerly Ohio representative, becomes district manager at Columbus; Robert K. Cooke, formerly representative in Pennsylvania, Maryland and West Virginia, is now district manager with headquarters in Pittsburgh; D. E. Bedford will continue as district manager at Albany, N. Y., covering expanded territory from the District of Columbia north through New England; and J. R. Wells has been added to the sales staff at Ashland, Ky.

**Chain Belt Co.:** Richard M. Leek was recently appointed to the newly created position of Mid-Atlantic district representative for the Construction Machinery Division. His office will be at 4125 Whitaker Ave., Philadelphia 24, Pa., and his territory will include Pennsylvania, Virginia, West Virginia, Maryland, Delaware, Washington, D. C., and the southern part of New Jersey.

**Allis-Chalmers Mfg. Co.:** Construction is under way for a new terminal warehouse and office building in Madison, Wis., to serve customers better in that area. The new modern, one-story building, will be 200 ft in length and 175 ft deep.

**American Bitumuls & Asphalt Co.:** Establishment of two new asphalt terminals at Troy, N. Y., and Lyons, N.Y., has been announced. Construction of these facilities is under way, and both terminals will be in operation this year. A complete line of all paving grades of asphalt meeting New York State Department of Public Works specifications will be available at both sites.

**Caterpillar Tractor Co.:** Plans for construction of a new plant, at a location not yet determined, have been announced. The new plant will be devoted to the production of the company's line of motor graders and industrial wheel tractors. This move is being made to accommodate at Peoria a broadened program of crawler tractor and diesel engine manufacture.

### Association Activities

**Portland Cement Assn.:** Carl D. Franks, who for the last 14 months has served as executive vice-president of the Association, has been elected president. Also announced were the elections of G. Donald Kennedy as executive vice-president, and E. F. MacArthur as treasurer.



## "YOU CAN'T BEAT A CARCO WINCH FOR CONSTRUCTION WORK"

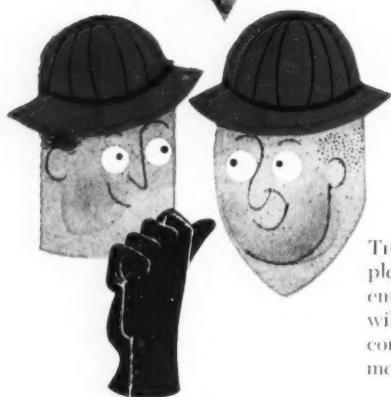
Mr. Hall, speaking from firsthand knowledge, says, "on construction work you can't beat a Carco winch for efficiency, power and long life."

You can expect greater value from the leading producer, and get it from Carco, first in winch production. PACIFIC CAR AND FOUNDRY COMPANY, Renton, Washington. Branches at Portland, Oregon, and Franklin Park, Illinois.



## WINCHES FOR ALL INDUSTRIAL TRACTORS





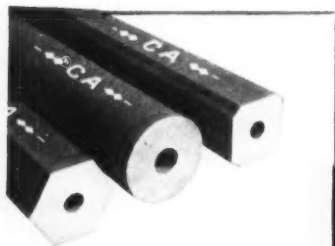
they're using

## CRUCIBLE HOLLOW DRILL RODS at FOLSOM DAM

THE FOLSOM DAM project is a big construction job. When completed it will be 340 feet high, 1400 feet long—with wing embankments extending for more than two miles. The new dam will provide a source for irrigation and power, and serve to control flood conditions in the American River Basin near Sacramento, California.

Part of the construction work involves the excavation of more than 9 million cubic yards of earth and rock. Here's where Crucible Hollow Drill Rods are playing a mighty important role. They can't be beat when it comes to hard rock drilling operations.

Crucible Hollow Drill Rods are made to tool steel standards by the world's largest producer of tool and other special purpose steels. This extra quality assures you of minimum rod breakage . . . and fewer valuable bit losses. For dependability in rock drilling, buy Crucible Hollow Drill Rods.



# CRUCIBLE

first name in special purpose steels

53 years of *Fine* steelmaking

## HOLLOW DRILL ROD

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.  
REX • HIGH SPEED • TOOL • REZISTAL STAINLESS • ALLOY • MACHINERY • SPECIAL PURPOSE STEELS



# One Sure Way to Get MORE DEFENSE FOR LESS MONEY

**H**ow can we get more national defense for less money? The best answer yet given to this question appears in a little-noticed section of the new defense budget. That answer, with which this editorial is concerned, is to provide more equipment with which to step up munitions production in an emergency. Thus we can eliminate much of the need to stockpile finished munitions in advance.

The new defense budget provides an appropriation of \$500 million, to be invested by the Secretary of Defense in specialized facilities required to produce munitions on a wartime scale, but not adapted to profitable operation by private industry in normal times. Facilities of this type are known as "stand-by capacity."

There is no strictly political controversy over the "stand-by capacity" program. It was originally suggested by Clay Bedford, Special Assistant to the Secretary of Defense during the Truman administration. It has since been reviewed and endorsed by the Eisenhower administration. Moreover, it involves little or no technical controversy. Civilian and military experts are well agreed that the only alternative to enormous expenditures for stockpiling

military equipment is to provide enough facilities for producing it quickly in an emergency.

## Here is the Key Idea

In his speech of May 19, introducing his defense budget to Congress and the nation, President Eisenhower stressed the value of such reserve capacity in these terms, "*The more swiftly and smoothly we can mobilize, the less our dependence upon costly standing armies and navies.*"

In accord with this idea, the \$500 million requested for the present reserve capacity program would be invested in tools that require a long time to produce, and so present grave complications in an emergency unless they are ready in advance. Some such tools would be installed in new plants that are needed to eliminate potential bottlenecks in the defense production program. Others would be ordered to replace that part of the government's present machine-tool inventory which is made obsolete by changes in the design of defense products. By completely "tooling up" with the most modern equipment, the admin-

---

(Continued on next page)

istration hopes to realize a production potential many times greater than could be achieved by spending the same amount of money on military end-products.

### Examples of Savings

***In the specialized field of defense production, adequate modern capacity is the key to both economy and speedy delivery in a pinch.***

Here are some striking examples from the recent report of the Advisory Committee on Production Equipment (Vance Committee) to the Director of Defense Mobilization:\*

—In the case of certain ammunition components, the cost of new capacity can be recovered in only six weeks of full production.

—If \$500 million worth of special tools needed to make aircraft are purchased in advance, aircraft production during the first two years of war will be increased about \$18 billion. In other words, it costs 1/36 as much to acquire the tools in advance as to acquire the aircraft.

—In the case of a certain ordnance item, an expenditure equal to the cost of only 150 units of the item will provide the capacity to produce thousands and save three years' time in meeting mobilization requirements.

***Moreover, reserve plants and equipment can be kept up-to-date at only a small fraction of the cost required to maintain an up-to-date reserve of military end-products.*** The cost of replacing 5,000 obsolete tanks is at least \$1 billion. The cost of new tools for a tank plant would be less than 10% of that amount.

---

\*This Committee, headed by Mr. Harold Vance, President of the Studebaker Corporation, included Clay Bedford, then President of Chase Aircraft, Manly Fleischman, former Defense Production Administrator, and several retired military leaders with wide experience in procurement.

### Savings Will Multiply

On the basis of facts like these, the Vance Committee recommended that the Defense Department spend \$500 million to \$800 million per year on specialized defense production facilities in order to provide substantial reserve capacity as soon as possible. It also recommended that expenditures for military end-products which get obsolete rapidly be held to a minimum. The Eisenhower administration has adopted this approach to the problem of munitions production in asking that \$500 million be invested in reserve capacity.

The importance of this approach is much greater than is indicated by the amount of money to be spent on new tools, although this amount will go far toward assuring a healthy machine tool industry, adequate to meet emergency demands. ***What is really important is the great saving that can eventually be made in the cost of our defense program by a modern tooling program.*** If we are to maintain this program for a long period, and if we are to pay as we go, we must have a low-cost program. No other plan to reduce and control the cost of a garrison economy can compare with the new approach suggested in the Vance Report and now embodied in the new defense budget.

Congressmen will do well to scrutinize all military appropriations carefully. They have a chronic tendency to be too big. But there should be no penny-pinching on investments in capital equipment that will pay out in as short a time as six weeks in a war emergency. It would be tragic if this opportunity for real economy were lost in the controversy over other aspects of the defense program. ***The tooling program is a key part of the Eisenhower effort to cut defense costs. It should be promptly approved.***

**McGraw-Hill Publishing Company, Inc.**



**"On awkward cuts, give us *SKIL* with One or Two-Hand Operation!"**



says **Charles Borresen**, supervisor,  
**D'Arcy Leck Construction Co.,**  
Minneapolis, Minnesota

one of Minnesota's largest  
construction companies.

"We maintain tight construction schedules on commercial and industrial buildings plus such specialized projects as schools and hospitals," says supervisor Borresen. "As

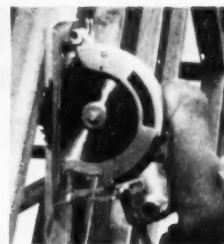
a consequence, SKIL fast factory branch service is of utmost importance. And of all the makes we've tried, SKIL Saws require the *least* service."

Mr. Borresen continues, "Otto Thaemlitz, one of our carpenters, (see picture above) has had a SKIL Saw of his own for 15 years. Claims there isn't a better saw made!"

"You can see why D'Arcy Leck Construction Company has standardized on SKIL Saws—uses 20 of them for greatest handling ease, lowest maintenance."



**Easier One-Hand Operation** is natural with SKIL Saws. Rear handle utilizes easy normal guiding motion of user's arm. Sturdy base supports tool on both sides of blade for maximum stability.



**Awkward Cuts No Problem** with SKIL two-hand operation. Safest by far to use in any position, SKIL offers perfect balance and surest control. No other saw so easy to use for any cut!

**SKIL**  
PORTABLE TOOLS

Made only by SKIL Corporation  
formerly SKILSAW, Inc.  
5033 Elston Avenue, Chicago 30, Illinois  
3601 Dundas Street West, Toronto 9, Ontario  
Factory Branches in All Leading Cities

**SEE YOUR SKIL DISTRIBUTOR OR CALL YOUR NEAREST SKIL FACTORY BRANCH FOR INFORMATION ABOUT THE COMPLETE LINE—10 SKIL SAW MODELS—6" TO 12" BLADE DIAMETERS**



# There are **TWO WAYS**

## **1** THE EASY WAY . . . .

. . . is to design a few basic machines, and then build up a line of additional models by adding extra counterweight and by speeding up the engine to try to meet two or three size requirements. The only real difference in these models lies in the counterweight and the dipper capacity.



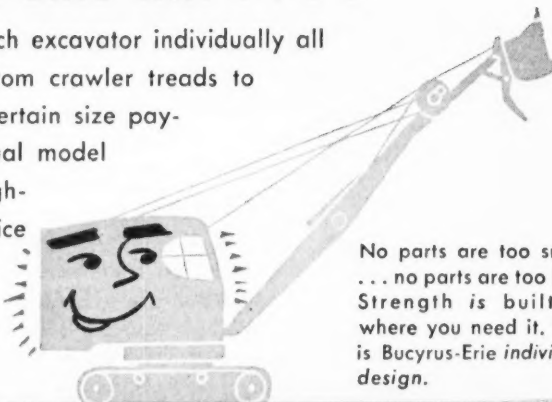
Of course, some of these machines will carry dippers too small. They won't produce the output they should — power is wasted.



Other machines with dippers too large and counterweight too heavy will sweat and strain from overloads and overwork. They will run up high repair bills and wear out in a hurry. Strength is not built in where you need it.

## **2** THE BUCYRUS-ERIE WAY . . . .

. . . is to design each excavator individually all the way through from crawler treads to boom point for a certain size payload. Each individual model is engineered throughout to meet the service and loads required.



No parts are too small . . . no parts are too big. Strength is built in where you need it. This is Bucyrus-Erie individual design.

8E53C

**BUCYRUS  
ERIE**

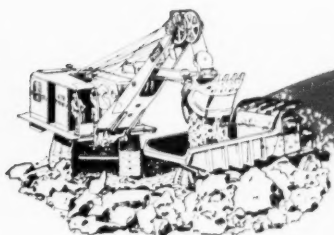
Individual design means bigger loads on every bite, faster digging cycles, lower maintenance costs, longer machine life. All these add up to higher overall output, lower overall costs. Compare *individually designed* Bucyrus-Eries with excavators in any other line before you buy. Ask your Bucyrus-Erie distributor to give you complete details on how individual design means bigger output for you.

SOUTH MILWAUKEE, WISCONSIN

# *to build a line of excavators*

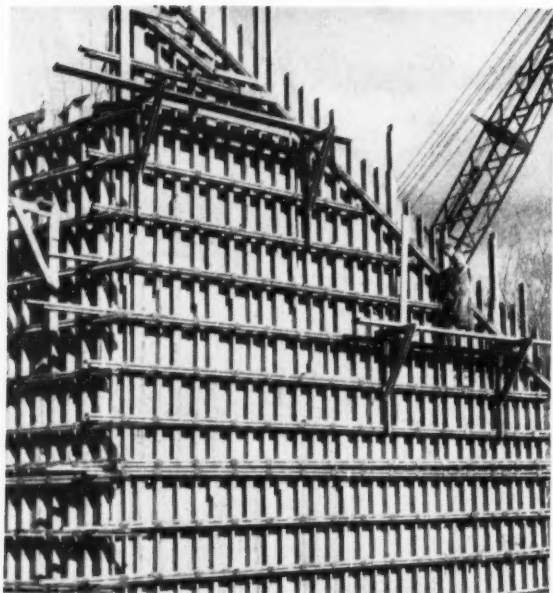


there's extra PROFIT for you  
with this  
**ALL-PURPOSE MACHINE**  
... on jobs too small for large machines  
... too big to do safely and efficiently  
by hand. Hydrocrane features full hydraulic  
control ... pin-point accuracy ... telescoping  
boom ... easily set, hydraulically  
operated outriggers. It's easily convertible,  
too, to dragshovel front-end,  
Hydrohoe.



**See Your Bucyrus-Erie Distributor**

SHOVELS • DRAGSHOVELS • DRAGLINES • CLAMSHELLS • CRANES



## Electric-Powered Wrench Speeds This Job

ONE OF TWO FORMS for reinforced concrete abutments on an overpass to span the Lackawanna Railroad tracks near Kingston, Pa. Each abutment is 265 ft long and contains 2,780 cu yd of concrete. Wood forms employed in their construction by the Joseph Futch Construction Co., Exeter, Pa., were held in place with 20,000 1/2x16-in. tie screws placed on 2-ft centers. After concrete had set and forms were to be stripped, this great number of form ties was removed by an Ingersoll-Rand electric Impactool, rated up to 5/8-in. bolt capacity. Construction superintendent M. J. Spott figures that the screws on both abutments were removed in about 50 hr, effecting a saving of approximately 580 man-hours. The tool paid for itself many times over on this job alone.

WORKMAN ON LADDER handles form tie removal easily and rapidly with hand-held machine that backs out the 16-in. bolts in a hurry. Impactool can be operated with one hand, does not transmit dangerous torque to the operator, although it packs a powerful rotary wallop automatically when needed to drive or remove screws and nuts, when drilling or handling other jobs where rotary motion is required. Portable power tools not only speed up former "drudge" jobs, but also by so doing usually release other heavy and expensive construction equipment, such as cranes, from the job at an earlier date. Each of the tie screws in these forms was spun out in just a few seconds.



TEMPORARY BRIDGE PLANKING is bolted down speedily by one workman operating an Impactool on a highway improvement contract on U. S. Route 11 near Kingston, Pa. Temporary bridge has 165 planks, 20 ft long, each secured to wooden timbers below with 12 bolts 3/8x9 in. The nut runner has a standard square socket to spin down and seat the 2,000 nuts required. Hand-tightening for this number of bolts formerly took 80 man-hours; job now is done in 5 man-hours. Electric hand tools are versatile on the job and can be powered with little trouble, even in remote areas. On this bridge job for Futch Construction Co. electricity was generated by a portable engine-driven generator, which also was useful to run other power tools.





**CELLARS...**

**...STREETS**

QUEENS STRUCTURE CORP

**...OR SEWERS**



## 4-wheel-drive does a job

Amazing is the word for the variety of profitable uses contractors find for their 4-wheel-drive "PAYLOADERS." In fact, the range of uses of these versatile tractor-shovels is limited only by the ingenuity of their owners and operators.

Dig! Load! Backfill! Stockpile! Lift! Carry! Strip! Push! Pull! — all these job capabilities makes them one of the busiest machines on *any* contract — and the most in demand. They get around the job fast, too — on pavement and ground and over curbs and sidewalks without injuring them.

See one of these powerful, multi-purpose "PAYLOADERS" in action and you'll be amazed at what it can do, too. Your "PAYLOADER" Distributor is ready to give you complete facts. See him today, or write The Frank G. Hough Co., 706 Sunnyside Ave., Libertyville, Illinois.



**WRITE**

WRITE for full information on any of the "PAYLOADER" models: Four-Wheel-drive HM — 1 1/2 yd. and HR — 1 yd.; Rear-wheel-drive Models HY — 1 1/4 yd., HF — 3/4 yd., HE — 1/2 yd.; Front-wheel-drive Models HAH — 1/2 cu. yd., HA — 12 cu. ft.



# PAYLOADER®

THE FRANK G. HOUGH CO. • Since 1920



# Proposals for Repair Parts Books

IMPROVEMENT and standardization of repair parts books for construction equipment constantly is in the minds of the Associated Equipment Distributors. In an effort to get all its members to standardize reasonably on a useful format, the Committee on Standardization of Repair Parts Books is circulating among the member-

ship another "recommendations" folder.

The folder is of suggested size and filled with ideas to make it easy for manufacturers to develop literature that will contain all the information and illustrations an owner needs to service his machines without delay. The present folder is an improvement over one

sent out a year or two ago for the same purpose.

Here is what a foreword on the second page has to say:

"Among the most important tools with which distributors and contractors in the field have to work are the manufacturers' repair parts lists, governing the equipment which they use daily.

"No matter how excellent a given piece of equipment may be, it is certain to eventually show wear or suffer a breakdown through accident. If the manufacturer's parts book is not adequate to facilitate fast and accurate ordering of needed replacement parts, such equipment may be completely useless for a considerable period of time. Jobdowns of this nature prove costly to all concerned, and jeopardize a manufacturer's reputation and good-will among his customers.

## Outline for Good Book

"Recognizing the importance of this subject, Associated Equipment Distributors has prepared the following booklet, containing direct suggestions for the standardization and improvement of manufacturers' repair parts books. A specially authorized committee—the Committee on Standardization of Repair Parts Books—has compiled and sifted the suggestions received from equipment distributors and users alike, and has subsequently outlined the minimum requirements of a good, useful repair parts book. This outline, which forms the basis of the following pamphlet, has been reviewed and endorsed by the Joint Cooperative Committee of Associated General Contractors of America and Associated Equipment Distributors.

"It is requested that every manufacturer of construction equipment carefully study the proposals presented on the following pages, review his present book in the light of these suggestions, and if possible incorporate the requested improvements in his next repair parts book.

"The Executive Office of Associated Equipment Distributors will sincerely appreciate receiving the comments of every manufacturer who receives this booklet, in order that A.E.D. may continue in its effort to render the best possible service to the construction equipment industry as a whole."

## PUZZLE

## SOLUTION



HOW TO GET THAT  
ROAD CONTRACT

AND STILL MAKE  
A DECENT PROFIT

USE



ROAD WIDENERS • BASE  
PAVERS • TRENCH ROLLERS  
BITUMINOUS PAVER  
FINISHERS

BASE PAVERS



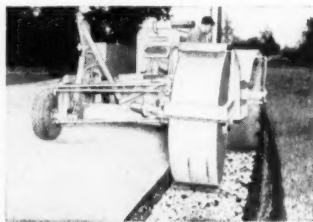
ROAD WIDENERS



PAVER FINISHERS



TRENCH ROLLERS



In today's construction game, where specifications are usually tough and dollars need to be stretched, Apsco equipment can be your best friend. If the job calls for road widening, trench rolling, base paving or bituminous paving, you'll do well to get the facts on Apsco.

Available through reputable equipment distributors across the land. Write us for the name of the one nearest you.

**ALL PURPOSE SPREADER COMPANY • ELYRIA, OHIO**



## TRU-LAY Preformed WIRE ROPE



### Why TRU-LAY Scraper Ropes Last Longer . . .

• Quality materials and expert manufacturing are factors in the longer life of TRU-LAY GREEN STRAND scraper ropes. But the most important thing is the grade and construction.

Sharp bends around small sheaves, abrasion from dust and dirt, shock loads—these are the things that sort the men from the boys when it comes to the life of the wire rope. If you want to hold down service costs, these are the factors to be considered when you are thinking about ordering new wire rope.

AMERICAN CABLE engineers have made unending checks of scraper ropes in service and know the best construction for the job.

They designed a rope with the exactly right combination of wire sizes and core—made from improved plow steel—and preformed. They put a green strand in it for quick identification.

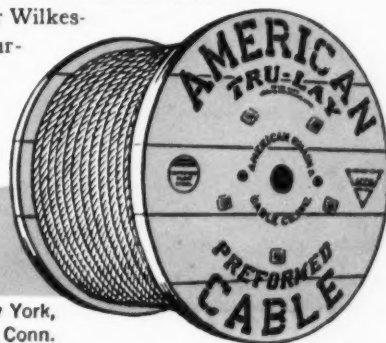
So when you need scraper rope, or rope for any of your earthmoving equipment—specify, and get, TRU-LAY Preformed GREEN STRAND. It's the one sure way for you to get the best possible, longest lasting, most economical wire rope for each machine you operate. See your AMERICAN CABLE distributor today, or write our Wilkes-Barre office for further information.

**ACCO**



AMERICAN CABLE DIVISION  
AMERICAN CHAIN & CABLE

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.





## Asphalt Sealer Sprayed...



TWO AIR GUNS operate side by side, but lay down different materials. Man in foreground is applying jet seal material; man in rear blasts sand on seal coat to prevent slick areas. Seal is applied to asphalt where petroleum solvent spillage occurs.

AIR GUNS saved considerable time in the resurfacing of parking areas at the U. S. Naval Air Station in Atlanta, Ga., during the application of a coat of Colfix jet seal followed by a layer of sand to prevent possible slick areas.

Efficiency and speed were gained by spraying rather than by slower hand applications.

MacDougald - Warren, Atlanta contractor, put down 41,000 sq yd of hot plant-mix asphalt over aircraft repair areas which are subject to spillage of petroleum solvents. Over this surface Guaranteed Waterproofing Co. applied 8,500 gal of Colfix jet seal at the rate of 0.20 to 0.22 gal per sq yd. Immediately after the seal was sprayed, 4 to 6 lb of concrete sand per sq yd was placed over the surface with sandblasting equipment.

### Ready Next Day

About 60% of the sand stuck, the rest was swept away and not reclaimed, as it was not economical.



## BIN BATCHER-MIXERS

### An Unbeatable Combination

Whether used for charging an individual 115 or 165 Mixer, or a pair as shown, a Bin-Batcher is the short cut to profit. Enables you to take the advantages of a central plant right onto any job. Several models. Ask for details.

- PORTABLE
- SAVES LABOR
- CUTS COSTS

CONSTRUCTION MACHINERY COMPANIES Waterloo, Ia.

## ...Air-Placed Sand Follows

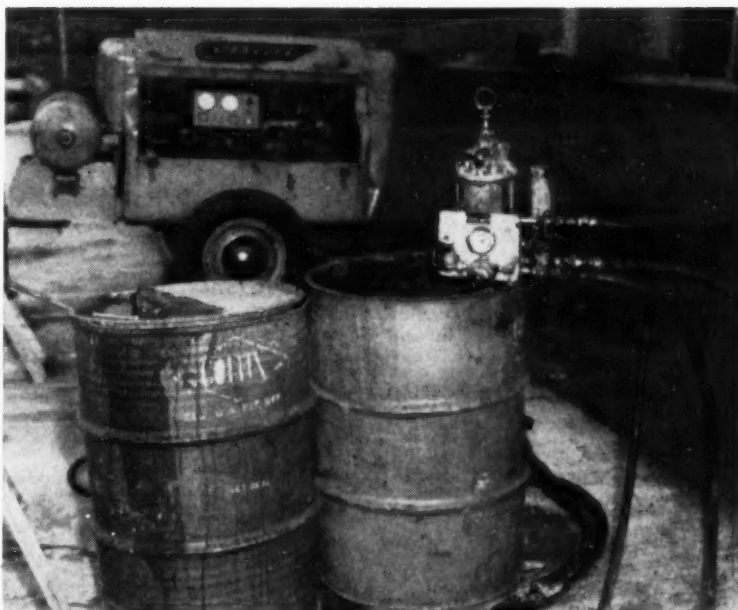
It was found that the surface dried and hardened quickly and the area was ready to use the following day.

The contractor used a Jaeger air compressor which could be moved quickly to follow the work. An Alemite #7810 air-powered agitator and an Alemite Tornado pump and pole gun handled the viscous seal material nicely and sprayed directly from 50-gal shipping drums.

### On One Truck

By loading the sand and seal equipment on one truck, it was possible to keep seal coat spraying and sand blowing moving together, one operator to each operation and the sand being applied immediately after the seal coat.

Jet seal was applied with the spray nozzle about 3½ ft above the ground which prevented too much of the liquid from being blown away. It was possible to treat from 3,000 to 4,000 sq yd per working day with two nozzle operators and one truck driver.



SEAL MATERIAL, Colfix, is pumped directly from 50-gal drum, in spite of its viscous nature. Stewart-Warner's Alemite air-powered agitator, pump and pole gun—powered by Jaeger compressor in the background—applied seal at 0.20 to 0.22 gal per sq yd.

**TOPS for ease of handling**  
**TOPS for Value!**

**THE NEW MODEL 135  
FELKER DI-MET  
Concrete  
Cutter!**

For Trenching and Patching; cutting contraction joints, curbs, sidewalks, driveways, and all common repairs and revisions to existing concrete!

**HIGHLY MANEUVERABLE!** Built from lightweight castings. Maximum strength and rigidity. Cuts dead weight! Handles easy as a baby buggy! Steering wheel sets course; holds to a straight line. Manual screw quickly lifts blade or sets depth. 3 wheel design, single end spindle. Hinged blade guard exposes front half of wheel for close-up work.

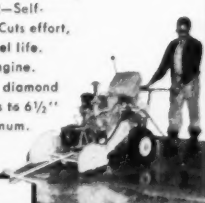
**POWER-PACKED!** Uses a full 13.5 horsepower gasoline engine; surplus of power extends wheel life. Takes deep cuts with ease. 12" diamond wheel cuts to 3½". With special guards handles up to 18" blades for 6½" maximum cutting depth.

### See Di-Met for a Full Line of Concrete Cutters!

Di-Met makes many machine models for every conceivable concrete cutting job—from occasional uses to high-production self-propelled concrete cutters. Ask your Felker DI-MET dealer or write for literature.

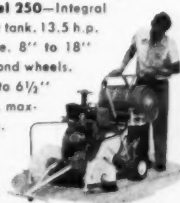
#### Di-Met Heavy Duty

**Model 252**—Self-propelled—Cuts effort, adds to wheel life. 13.5 h.p. engine. 10" to 18" diamond wheels. Cuts to 6½" deep, maximum.



#### Di-Met Heavy Duty

**Model 250**—Integral water tank, 13.5 h.p. engine. 8" to 18" diamond wheels. Cuts to 6½" deep, maximum.



### LOW COST!

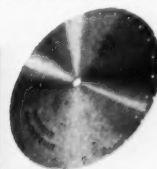
PRICED AT  
**\$580** net f.o.b.  
Torrance,  
Calif.

Here's real footage at  
lower cost per cut!



### FOR LOWER COST—PER CUT

Specify DI-MET Segmented Type Diamond Wheels! The wheel whose built-in quality insures more footage, longer life, lower cost—per-cut! Peak Performance in any operation!



**Di-Met Standard Model**  
—Low cost model with 7.5 or 13.5 h.p. Handles up to 12" diamond wheels. Cuts to 3½" depth.



### FELKER MANUFACTURING CO.

Torrance • California

World's Largest Manufacturer of Diamond Abrasive Cut-Off Wheels and Equipment



WE'RE SO PROUD TODAY... WE'VE GOT

# A NEW BANT

...JUST LOOK WHAT YOU GET!

✓ **2-SPEED INDEPENDENT**

**TRAVEL**—enables the operator to move at varying speeds, forward or reverse, while operating the front end attachment.

✓ **LOW GROUND BEARING**  
**PRESSURE**

—2 pad sizes available  
5 lbs. per sq. in. with 16" pads—  
3 1/3 lbs. per sq. in. with 24" pads.

✓ **BIG MACHINE**

**STABILITY**—longer, wider tracks—and a low center of gravity gives greater lifting capacity.

✓ **HIGH SPEED**  
**OPERATION**

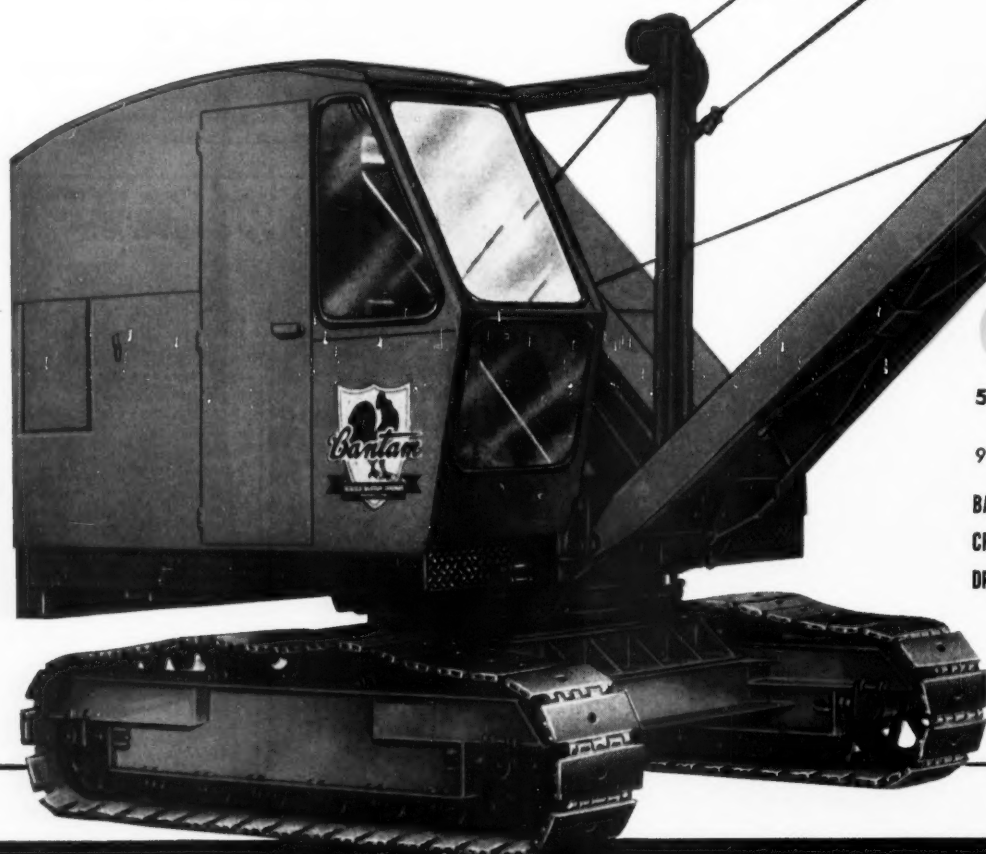
—features immediate acting straight mechanical controls, easy positive braking action, fast line and swing speeds.

✓ **FAMOUS BANTAM**

**FEATURES**—power boom hoist, machine cut gears, anti-friction bearings, 4 hook rollers, greater visibility.

✓ **94-INCH OVER-ALL**  
**WIDTH**

—allows the Bantam to be moved from job to job on standard trailers without special highway permits.



Model

**C-35**

**5 TON — 3/8 CU. YD.**

Available with  
9 fast-change attachments:

BACK HOE	CLAMSHELL
CRANE	SHOVEL
DRAGLINE	GRAPPLE
	MAGNET CRANE
	PILE DRIVER
	BACKFILLER

ANOTHER NEW PRODUCT OF THE



**SCHILD**  
*Bantam Co.*

**WORLD'S LARGEST PRODUCERS OF TRUCK-CRANES AND EXCAVATORS**



# AM! IT'S A CRAWLER

and it sells  
for only

\$9,350

F.O.B. FACTORY—BASIC CRAWLER  
WITH 1400 LB. COUNTERWEIGHT,  
LESS ATTACHMENT  
Price Subject to Change

Your **SCHIELD Bantam** Distributor

is Scheduling On-The-Job Demonstrations

Right Now... *See Him Today!*

(or write factory to set a date)

● Over 4,500 Satisfied Bantam customers all over the world tell the story better than we can! Building one size machine and making it a top quality rig has been Schield Bantam's contribution to Shovel-Crane Industry. Bantam's specialization and mass production of this  $\frac{3}{4}$  cu. yd. machine has meant higher quality at the lowest cost in the industry! The idea of the all-purpose  $\frac{3}{4}$  cu. yd. power shovel-crane has long since found wide acceptance. NOW... you, too, can receive the rewards from this great American idea by letting Schield Bantam solve your lifting and excavating problems! **Whether your work calls for a crawler or a truck mounted crane-excavator, the BANTAM can do your job faster...better...cheaper! Write today for further information on the BANTAM for your jobs!**

Schield Bantam Co. 221 Park St., Waverly, Iowa

THIS, TOO, IS  
**ALL NEW!**

Model  
**T-35**

6 TON  
 $\frac{3}{4}$  CU. YD.

**A BRAND NEW CRANE  
CARRIER CUSTOM BUILT  
BY A FAMOUS TRUCK  
MANUFACTURER**



## BACK HOE

Crawler working in solid mud... crawls out after trenching with no trouble. High flotation enables Bantam to work in any kind of underfoot conditions—muck, mud, sand, etc.

## SHOVEL

Handles up to 100 cu. yds. per hour from stock-pile... up to 90 cu. yds. excavating in average material. Automatic dipper trip means quick, effortless dumping. Also available with  $\frac{1}{2}$  cu. yd. rehandling bucket.

## DRAGLINE

Digs 90 cu. yds. per hour in average material, available with perforated or solid buckets. Ideal for gravel pits, ditch cleanout, cutting new drainage ditches, basement excavations, stock-piling, pits, etc.

## CLAMSHELL

Ideal for stock-piling and loading out of stock-pile... precision excavating of bell holes, special excavating on pipeline jobs, cleanout of trenches. Handles up to 80 cu. yds. of average bulk material per hour.

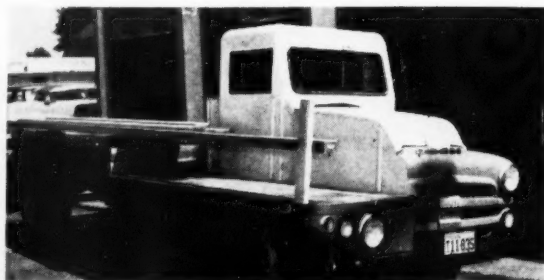


# CONSTRUCTION EQUIPMENT NEWS



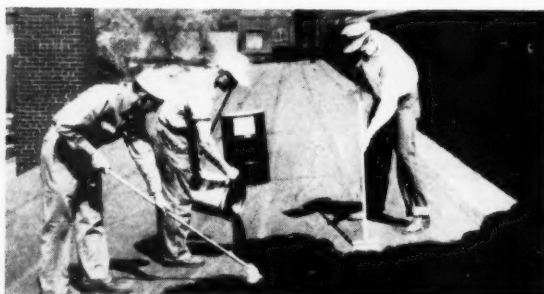
## Shovel, Crane, Dragline or Pull Shovel

A new 1-cu yd or 25-ton capacity crane known as the Lima Type 44, is available with either crawler or rubber mountings. As a shovel, it is equipped with a 20-ft boom and 18-ft dipper handle. Crane booms are available up to and including 100 ft, less jib. Jibs 15, 20 or 30 ft are available. Unit can be converted in the field.—Baldwin-Lima-Hamilton Corp., Lima, Ohio



## Here's an Unusual Type Truck

This unique island-type truck with one-man cab was specially built on a 1-ton Dodge truck chassis to obtain 32-in. floor height for easy loading and 20-ft body platform length to deliver long lumber and other building materials. One man now does the same work which formerly required two men.—Oregon City Lumber Co., Oregon City, Ore.



## Silicone Roof Coating

A new roof coating, Rufferseal, said to combine silicones with long-fiber Canadian asbestos, imported asphalt and non-evaporating waterproofing oils, gives unusual durability. Free from checking, cracking and sagging, the material is easily applied without heating and can be brushed or sprayed.—The Monroe Co., Inc., 10703 Quebec Ave., Cleveland, Ohio



## For City and Suburban Jobs

Because it is highly maneuverable and mobile, the Cleveland Model 92 trencher is recommended for city and suburban jobs. This improved unit doubles the number of digging wheels and traction speeds previously available. The 48 evenly graduated speed combinations provided by the transmission give Model 92 thirty or more usable digging combinations, providing the right speed and power for every type of soil and digging job.—Cleveland Trencher Co., Cleveland, Ohio

## On-the-Job Previews of Machinery, Tools and Equipment



### New Block-Handling Tool

The handling of concrete and cinder block has been simplified by a new tool now on the market. It is designed to fit into the block openings, and case-hardened metal teeth grip the block so it can be carried easily. A bar releases the tool from the block. Two spirit levels are installed to assist in setting the blocks.—**Lay-Level, Inc., Toledo, Ohio**



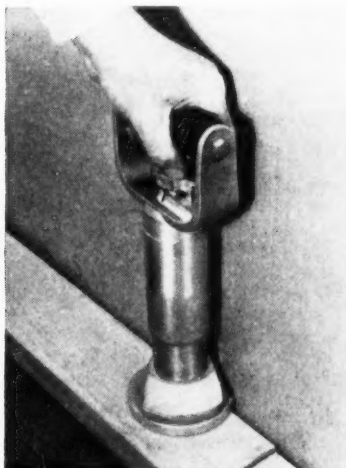
### Power-Driven Impact Wrench

To speed construction and cut manpower costs on its standardized steel-frame industrial structures, **Luria Engineering Co., of Bethlehem, Pa.**, frequently employs high-tensile bolts fastened with an Ingersoll-Rand Impactool power-driven wrench. Advantages claimed are: two-man crew instead of four required for riveting, and 400 bolts a day, as against 300 rivets.



### This Saw Operates in Any Position

The manufacturer of this chain saw claims you can swing it upside down, blade down, blade up—any position at all—and it will cut full power without any adjustment. Called the **Lombard Model 5 power house**, it has a 5-hp engine and comes in various sizes, 20 to 40 in. Additional information can be had from **Lombard Governor Corp., Ashland, Mass.**



### Stud Setter

Feature of the **Velocity-Power Driver**, a tool for setting studs in concrete or steel, is a permanently attached spall or protective shield. In close quarters, the shield can be lifted out of the way.—**Velocity Power Tool Co., Pittsburgh 8, Pa.**



### Small and Big Job Roller

This  $\frac{1}{2}$ -ton **Motoroller** enables the contractor to accept the smaller rolling jobs and realize the same proportionate profit as from the heavier, less maneuverable equip-





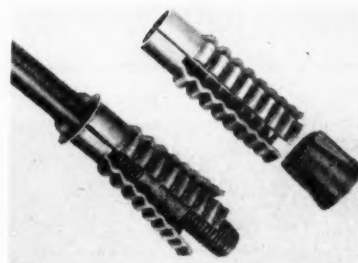
## CONSTRUCTION EQUIPMENT NEWS . . . Continued

ment on the larger jobs, according to the manufacturer. Also it is claimed this midget roller may be used in conjunction with heavier equipment to roll out laps and compact the confined areas inaccessible to the larger equipment.—**Gabb Special Products, Windsor Locks, Conn.**

**SPACE HEATERS**—Master Vibrator Co.'s line of space heaters have greatly increased BTU and have a new streamlined appearance. The three models are designed for use with kerosene or No. 1 or 2 fuel oils and



provide quick economical heat without expensive ducting for drying, heating working areas, thawing and many other applications requiring portable heating plants. The Models B-160, B-240 and B-400 range in capacity from 160 to 400 BTU and outputs of 1,100 to 3,500 cfm. They come with pneumatic tires and are easy to handle on the job.—**Master Vibrator Co., Dayton 1, Ohio**



**EXPANSION ANCHOR**—This steel expansion anchor, known as Roof-Lock, is designed to develop the maximum in holding power. The work-hardened ribbing, which increases in depth from top to bottom, provides for tightening in drilled holes of varying diameter. These ribs also provide a large bearing surface by their multiple points of pressure contact when the tapered plug is drawn down into the outer sleeve. It is designed for 3/4-in. dia bolt, anchor is 1.25 in. O.D., 3.5-in. length. The efficiency range for maximum holding power is 1 3/8 in. to 1 5/8 in. hole.—**Mining Products Div., Equipment Corp. of America, 2103 St. Clair, Cleveland 14, Ohio**

## It takes a **FULL** team

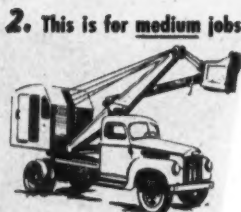
... whether it's a barber shop quartet



... or digging equipment



1. This is for **big** jobs



2. This is for **medium** jobs



3. Sherman for all other jobs

On many excavating jobs the use of big equipment is costly and time-consuming. The Sherman Power Digger is designed so that you get all the advantages of power digging on these jobs. Thousands of users have proved that the Sherman Power Digger reduces costs. Write today for descriptive literature U47.

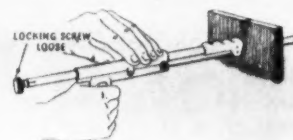
Designed, Engineered and Manufactured Jointly by  
**SHERMAN PRODUCTS, Inc.**  
Royal Oak, Michigan

**WAIN-ROY CORPORATION**  
Hubbardston, Mass.

Patent No. 2,303,825  
Other patents pending

# Sherman

**PRODUCTS, INC.**  
ROYAL OAK, MICHIGAN



**ENDLESS HACKSAW**—A new endless hacksaw, designed so that the operator can saw through an unlimited amount of material without being restricted by the usual hacksaw frame, is being marketed under the name of Leytool. The tool consists of a spring-loaded plunger with a grip handle and a guide tube which supports the regular 10- or 12-in. blade. The blade rides on three hardened steel balls in the front casing of the guide tube. After sawing to a depth equal to the width of the blade, a knurled locking screw is loosened. The front casing of the guide tube then remains at the point of contact of the blade and the work. The blade is now actuated by the spring-loaded plunger and is not restricted to the depth of cut. Pressure is needed on the forward stroke only as the powerful internal spring makes the return stroke automatic. This new tool can be purchased for \$4.89.—**Alpha Tool & Supply Co., Cloister, N. J.**

# Oklahoma Contractors' Report:

## ***No Equipment Failure ... No Loss of time ... IN FIVE YEARS!***



J. & H. Clark, Earth Moving Contractors in Perry, Oklahoma boast a record that any earth-moving man would be proud of . . . NO LOST TIME IN FIVE YEARS!

The Clark Brothers keep all their equipment on all their many jobs (example above) in constant operation. They write:

"We've been using Cities Service Products for the past five years, and have never had an equipment failure. What's more, our equipment is put to harder use than average equipment. We've moved as high as 4.2 yards a minute!

"Thanks to the fine Cities Service Products, we have had no loss of time. We use Cities Service Trojan Greases on our hydraulic equipment, Cities Service C-300 Oils on our diesel equipment, and Cities Service C-800 Oils on our gasoline equipment."

WHY NOT FIND OUT HOW THE COMPLETE LINE OF CITIES SERVICE FUELS AND LUBRICANTS CAN SAVE YOU TIME AND MONEY, STEP UP PRODUCTION? Call your nearest Cities Service office or write Cities Service Oil Company, Dept. H6, Sixty Wall Tower, New York City 5, N. Y.

**QUALITY PETROLEUM PRODUCTS**



# FUNK

## Heavy-Duty

### CLUTCHES, and POWER UNIT DRIVES

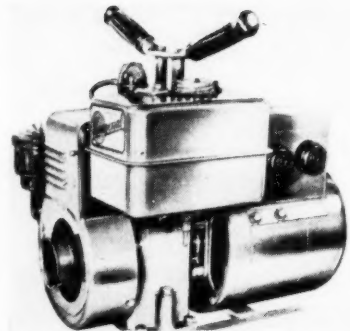
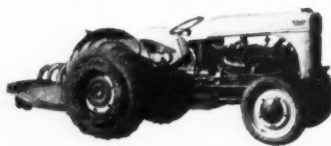
Here is the low-cost solution for keeping old equipment on the job. Repower, using FUNK Take-Offs and Clutches. Available in a wide variety of types to fit most requirements for shaft speed and installation space. Designed to fit any standard SAE flywheel housing or Ford Industrial Engine. Write for specifications, or assistance on your power problem.

**FUNK AIRCRAFT CO.**  
3303 Airport Drive, Coffeyville, Kansas



FUNK Products include:

- Straight Power
- Take-Off Clutches
- Gear Reduction Take-Offs
- Right Angle Take-Offs
- Front End Take-Offs
- Jack Shaft Extensions
- Ford Tractor Conversion Kit, changes to 6 or V-8 engine, doubles power.



**SMALL ELECTRIC PLANT**—Especially well suited for portable service, a small electric plant produced by Universal develops a full 1,000-w ac in a packaged unit and requires less than 2½ cu ft of space. It is powered by a heavy-duty, one-cylinder, air-cooled gasoline engine, with an oversize generator. It has two convenient twist lock outlet receptacles for lighting or for operating appliances and power tools. Easy push-button starting is another feature of the plant.—Universal Motor Co., 494 Universal Dr., Oshkosh, Wis.

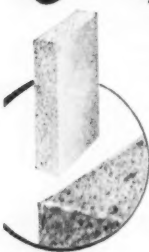
**EXPERIMENTAL EUCLID**—An experimental rubber-tired bulldozer has been placed in operation at a power plant excavation in southern Ohio. The unit, known as Model TPM or prime mover, is powered by a 300-hp engine. It is an all-wheel steer, all-wheel drive tractor, weighs 48,000 lb, and is equipped with a bulldozer blade. Working under wet conditions, the TPM is loading various makes of scrapers in less time than usually needed for average loads, and is loading them with larger and heavier loads than can normally be obtained under such conditions. Three 15.5-yd Euclid scrapers on the job are averaging 18.1 yd per load.—The Euclid Road Machinery Co., Cleveland 17, Ohio

## SERVICISED PRODUCTS for TILT-UP and PRE-CAST CONSTRUCTION

### Cementone

#### SPONGE RUBBER JOINT FILLER

- Matches color of concrete
- Fully resilient—non-extruding
- Made in any degree of compressibility
- Supplied in any thickness, length



Seal tilt-up joints with resilient, non-extruding Serviced Sponge Rubber Joint Filler. May be cemented to concrete panel before being placed to speed erection and control compression of the joint. Serviced Calk-Crete caulking compound recommended to seal recessed joints when they are specified.

### Curing and Separation

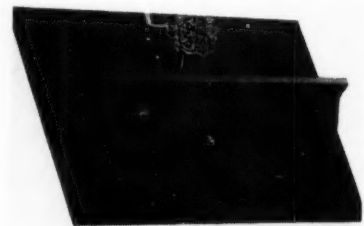
#### COMPOUNDS

##### Three Types:

- Curing Compound and Separation Membrane
- Separation Membrane for surfaces to be painted
- Separation Membrane

Serviced Curing Compounds and Separation Membranes are easily sprayed or painted on . . . are made in types to meet every requirement. All types meet ALL specifications. Positive separation or bond-breaking speeds construction . . . reduces costs.

Write for descriptive Catalog on Serviced Products. No obligation.



**NEW RUBBER CLEATED BELT**—A new rubber conveyor belting with rubber cleats incorporated as integral parts of the belt itself is now being offered. Advantages claimed over the usual angle-iron-riveted or bolted-on cleats include freedom from breakage or pulling off the cleats and consequent replacement costs. It is being sold under the name of Sky Kleet.—Goodall Rubber Co., Whitehead Rd., Trenton 4, N. J.



**SERVICISED PRODUCTS CORP.**  
6051 W. 65TH STREET CHICAGO 38, ILLINOIS



you've got to

# Swing that Rear-End

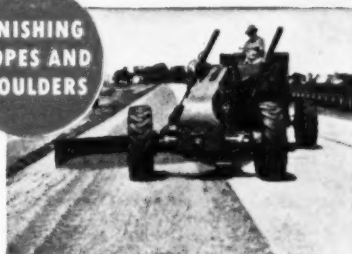
for **TOP** performance



Windrows large enough to stall the average motor grader, or cause its front end to slide sideways, are handled easily by the A-W Power Grader. Rear steer has the rear wheels *pushing* behind the toe of the blade while the powerful front drivers *pull* ahead of the heel. We call it "Controlled Traction" and it moves more of any kind of material, farther and faster than would otherwise be possible.

On job after job, right straight through the year, All-Wheel Steer simplifies and speeds things up for the operator... does more work and better work... saves time and money. No two ways about it... you've got to SWING THAT REAR-END for *top* performance.

**FINISHING SLOPES AND SHOULDERS**



**MIXING BLACKTOP**



**GRADING SLOPES**



**CLEANING DITCHES**



*...handling many other jobs*

## Austin-Western

**Power Graders  
Road Rollers • Motor Sweepers**



**Construction Equipment Division**

Manufactured by

**AUSTIN-WESTERN COMPANY**

Subsidiary of Baldwin-Lima-Hamilton Corporation

AURORA, ILLINOIS, U.S.A.

**IN EVERY CORNER  
OF THE EARTH**



**Frigid Arctic or  
Steaming Africa...  
You Can Rely on KERN!**



Enthusiastically acclaimed by engineers throughout the world... renowned for accuracy under ANY conditions... Kern precision instruments give you unquestioned accuracy... dependability... precision!

#### **WORLD FAMED KERN NK-3**

A superb triumph of designing skill, the NK-3 is the ideal instrument for exact technical levelings, larger length levelings and for tachymetrical surveys in flat country. A tribute to old-world skills... the NK-3 permits both the level and the leveling rod to be observed simultaneously through the telescope!

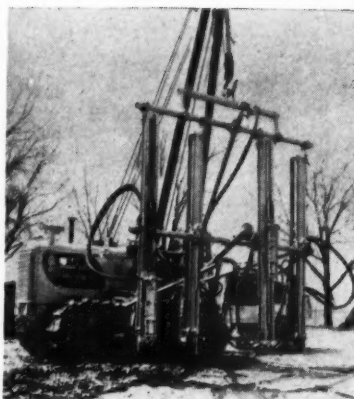
#### **COMPLETE SPECIFICATIONS**

Whether your job takes you to the swamps of Indo-China or the ice floes of Alaska... the NK-3 is the single answer to all your needs! Write TODAY for descriptive brochure and specifications.

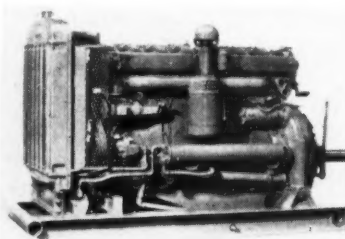
Complete Service Department...  
Factory Trained Personnel

**KERN SURVEYING INSTRUMENT  
DIVISION**

**PAUL REINHART CO., INC.**  
70 Beaver Street, New York, N. Y.



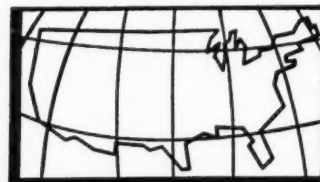
**PIPELINE DRILL RIG**—Claiming it has the most advanced pipeline drill rig available, Le Roi has announced the SB-30 Pipeliner Special for mounting on any suitable crawler tractor. Equipped with adjustable boom arms the SB-30 will be furnished with two, three or four drills in either the heavy duty 4-in. class or the lighter 3-in. class. It can be quickly mounted or dismounted and can be equipped for drilling from two to four holes at once. The adjustable boom arms free several men from the drilling crew. Control of the chassis movement is entirely mechanical and is actuated by air motors. The drilling unit will move from the closed position of 6 ft outward from the tractor to a maximum open position of 10 ft. Vertical positioning of the drills is also motor controlled. The drill can be angled outward to almost 45 deg and inward toward the tractor to approximately 30 deg. Weight of the unit ranges from 1,500 to 5,000 lb.—LeRoi Co., 1706 S. 68th St., Milwaukee, Wis.



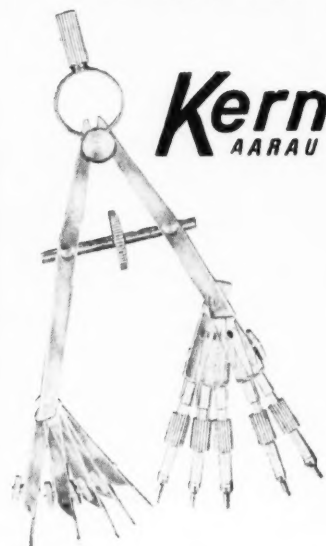
#### **MURPHY EXTENDS DIESEL LINE**

—The power range of Murphy Diesel engines has been extended upward with the addition of four new models having a bore of 6 $\frac{3}{8}$  in. and a stroke of 6 $\frac{1}{2}$  in. Model 24 is rated at 185-200 hp; Model 124 at 210-225 hp; Model 224 at 200-215 hp; Model 324 at 225-240 hp. Models 24 and 124 operate at 1,200 rpm and models 224 and 324 at 1,400 rpm. The addition of these four models brings the number of models offered by Murphy Diesel up to 25. Outputs of models range from 90 to 240 hp.—Murphy Diesel Co., 5317 W. Burnham St., Milwaukee 14, Wis.

**TRANSCONTINENTAL...  
OR 'ROUND THE WORLD'**



**Wherever Accuracy and  
Precision Count...  
You Can Rely on KERN!**



Whether it's the layout for a community in Westchester... or a map of unexplored Tibet... Kern precision instruments are your assurance of exact precision... positive accuracy!

#### **TRADITIONALLY THE FINEST**

Designed for maximum efficiency... simplest operation... every Kern precision instrument is the final result of over 150 years of study... a century and a half of constant improvement and progress. From the smallest ruling pen to the most advanced set, every Kern instrument is a product of craftsmen born to their art... and educated by the world's strictest teachers!

#### **FIND OUT TODAY**

Right now, drop us a line. We'll send you a beautifully illustrated brochure of Kern precision drawing instrument sets and individual pieces. Set prices from \$15 to \$100.

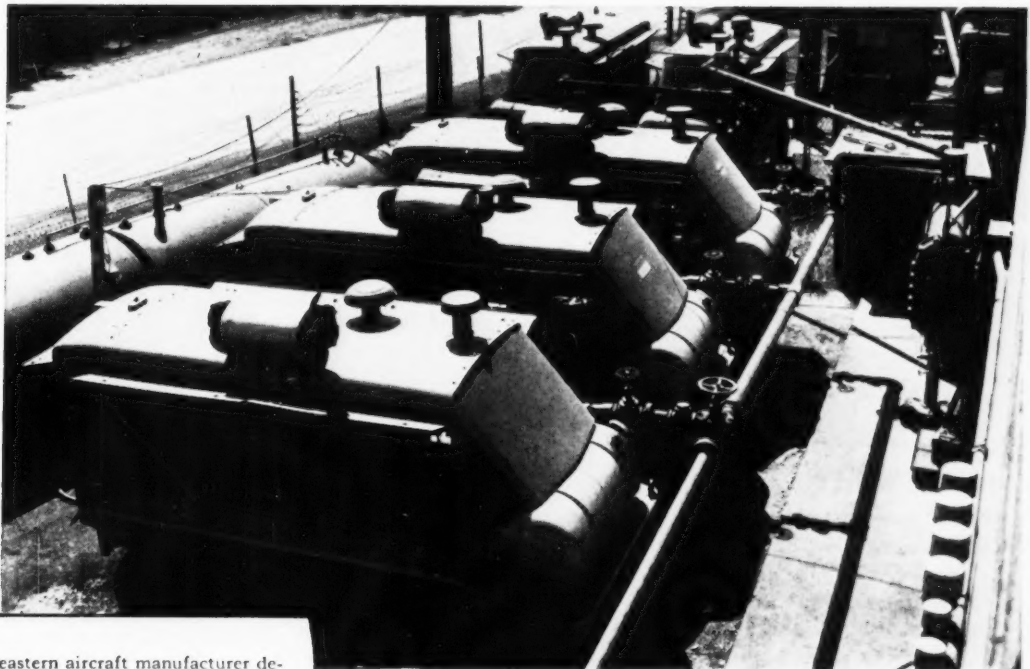
At Your Nearest Dealer, or Write To:

**KERN DRAWING INSTRUMENT  
DIVISION**

**BORDEN & RILEY PAPER CO.**  
60 E. 11 Street, New York City

# 3000 cubic feet of air per minute

## 20 HOURS A DAY — 6 DAYS A WEEK!



A large eastern aircraft manufacturer depends on these five 600-cfm GYRO-FLO portables to provide a continuous supply of compressed air for testing purposes, while permanent facilities are being constructed. Pressure is automatically maintained within 100 and 110 psi throughout the entire capacity range of compressors.

...with these five

### **GYRO-FLO** **ROTARY PORTABLES**

Taking over a job, later to be handled by I-R stationary units, these five *portable* compressors supplied 3,000 cfm of clean dry compressed air on a nearly continuous schedule. Their performance under these grueling conditions has been completely satisfactory.

Such service-proved dependability of GYRO-FLO compressors has made them the most wanted compressors in the world today. This dependability is the result of GYRO-FLO's advanced rotary design—with only one fifth as many wearing parts as old style piston-type compressors. There are no valves to leak —nor are there pistons, rings, rods or clutch to

wear out, replace, adjust or maintain.

Oil injection cooling gives discharge air that's at least 100° cooler than in other types of compressors, greatly increasing the life of air hose. Oil injected for cooling also flood-lubricates all moving parts of the compressor. A separator removes every trace of this oil from the air before it enters the hose.

The continuous rotary action produces a steady flow of compressed air—free from pulsations or vibration.

If you want the world's most *modern* portable compressor, write, wire or phone your nearest I-R distributor or branch office.



## Ingersoll-Rand

11 Broadway, New York 4, N. Y.

COMPRESSORS • ROCK DRILLS • AIR TOOLS • TURBO BLOWERS • CONDENSERS • CENTRIFUGAL PUMPS • DIESEL AND GAS ENGINES



# FASTENING COSTS CUT AGAIN!

## NEW *Ramset* PLUS-POWER JOBMASTER

does heavy-duty work  
at light-duty cost

A year ago, we introduced the newest development in powder-actuated fastening, the RAMSET JOBMASTER, with important features which have helped make it the most widely used tool in the industry.

NOW, with no sacrifice of these valuable advantages, we announce the new PLUS-POWER JOBMASTER, to bring still more economy and versatility to the high-speed, low-cost RAMSET SYSTEM for fastening into steel and concrete.

SAVE  $\frac{1}{3}$  POWER LOAD COST...

DO MANY MORE "TOUGH" JOBS...

WITH PLUS-POWER JOBMASTER

You can make substantial savings in many of your heavy-duty fastening jobs with the new PLUS-POWER JOBMASTER, with  $\frac{3}{8}$ " barrel. Using lower price, light-duty loads, this new RAMSET Tool will set most Tru-Set  $\frac{3}{8}$ " heavy-duty studs and drive pins, thus cutting  $\frac{1}{3}$  off your powder load costs.

Further savings are gained through the use of our new Tru-Set  $\frac{3}{8}$ " Flat Head Drive Pins, which require no discs or disc adaptor, and cost considerably less than comparable heavy-duty pins.

Best of all, you obtain these new economies with the same speed, ease and convenience of the standard JOBMASTER which have made it the outstanding favorite for high-speed, low-cost fastening into steel and concrete.

***Ramset Fasteners, INC.***

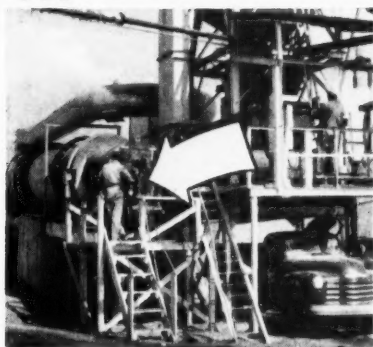
Ramset Division, Olin Industries, Inc.  
12117 BEREA ROAD • CLEVELAND 11, OHIO



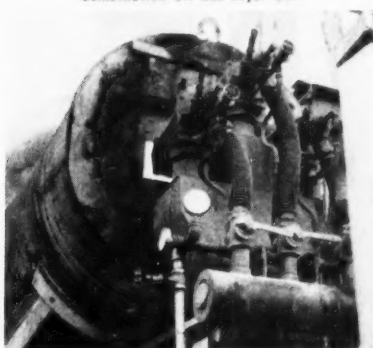
### Ask for demonstration . . .

If you now use a JOBMASTER, let your dealer show you the advantages of a plus-power assembly for your present tool. Or, if you use any other powder-actuated tool, or none at all, see how PLUS-POWER JOBMASTER gives you 2-tools-in-1, to drastically cut costs, reduce work and save time for fastening into steel and concrete. Call your dealer or write us for details.

# At Sam Finley, Inc., Atlanta, Georgia



Finley Plant No. 1 has a Hopkins Combination Oil-Gas Dryer Unit



"We have 10 Plants using  
**HOPKINS VOLCANIC  
DRYER UNITS**"



● Looking for a low-cost burning system for your asphalt plant? Let Sam Finley, Inc. tell you about their experience with Hopkins equipment: "We have ten plants using Hopkins equipment, and in every case, the units have proven very satisfactory to us. We find they have increased production and lowered fuel consumption. Our first Hopkins unit was installed several years ago, and we have been installing them as fast as possible since that time. All of the Hopkins Volcanic units have given us excellent service."

Why don't **you** take advantage of Hopkins' efficient operation, as has the above contractor? A letter or phone call will bring you descriptive literature, complete details, and follow-up by a Hopkins representative.

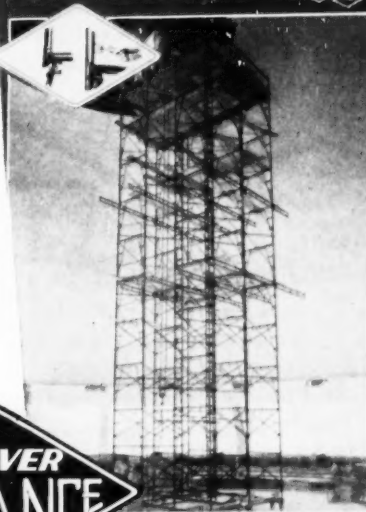
**HOPKINS VOLCANIC SPECIALTIES, INC.**  
ALLIANCE, OHIO

## COST CUTTING BECOMES SIMPLE ARITHMETIC WITH **ADVANCE** SCAFFOLDING

The ability to make money is built into ADVANCE tubular steel scaffolding. Each feature—self-contained, simple to operate Cam Locks . . . trigger action panel attaching Stack Locks—is employed so as to assure user-profit. Unequaled acceptance and repeat rentals and purchases by building and trade contractors as well as building owners prove that ADVANCE scaffolding is best for any construction and maintenance problem.

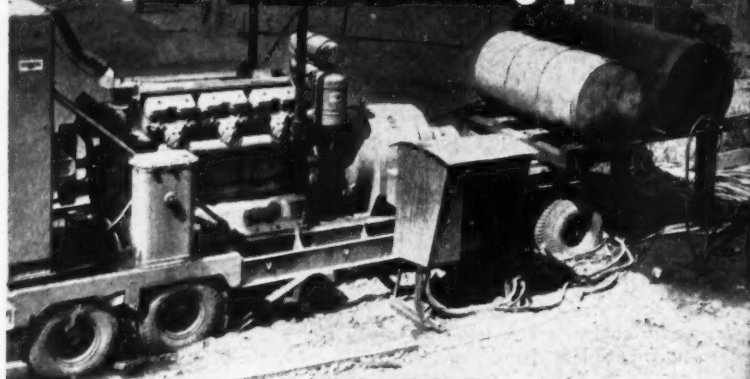
Are you getting in on the simple arithmetic that spells savings in dollars for scaffolding users? ADVANCE can help you get started! Write direct for free literature, engineering and specification data.

BEAVER-ADVANCE products are distributed nationally through industrial and construction equipment dealers. Inquiries re distributorships are invited.



**ADVANCE SCAFFOLD DIVISION**  
BEAVER ART METAL CORPORATION, ELLWOOD CITY, PA.

# 314,000 WATTS on WHEELS for portable crushing plants!



**J. N. CONLEY**, well-known Portland, Ore., contractor has cut operating costs by driving his crushing plants with thrifty electric motors, powered by a giant, trailer-mounted diesel generator. Conley's heavy-duty LaCrosse Low Bed Trailer gives his 314,000 watt generating plant easy mobility—permits moving power unit completely out of range of abrasive dirt and dust from crushers. Trailer rolls from job-to-job in minimum lost-time . . . eliminates cost of building permanent foundations. Compactly arranged on the

trailer deck are: 314-KW, generator, 500-HP. diesel engine, complete panel control board, and an 86-gal.-capacity radiator for engine cooling. A gas engine compressor with two 15-cu.-ft. air tanks supply air for starting the motor. Why not find out the advantages you can gain by mechanizing your operations with job-proved LaCrosse Trailers. Choice of 85 low-cost production models— from 6 to 67 tons capacity— flat, drop or tilting platforms. Also custom-built models for special needs. Write TODAY!



LC-25  
**LaCROSSE TRAILER CORPORATION, LaCrosse, Wis.**

- ☐ Rush complete information on LaCrosse trailers:  
☐ Specifications ☐ Prices ☐ Delivery  
☐ Send name of nearest LaCrosse Distributor.  
☐ We may buy a ..... ton trailer about ..... (date)

Name.....Title.....

Employed by.....

Address.....

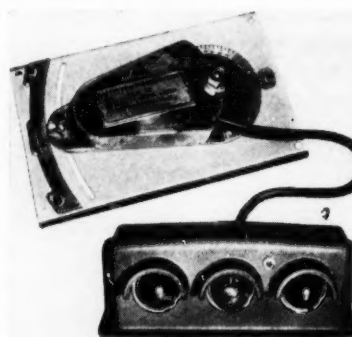
City.....State.....

## LaCROSSE

*America's Favorite LOW BED TRAILER*



**MATERIAL SPREADER**—A new Hi-Way Material Spreader for one-man operation, designed to handle pelletized calcium chloride and rock salt for road stabilization, sand and chips for seal coat work, and stone up to 1½ in. in size, has been placed on the market. The feed roll which distributes the material, is driven from the truck drive shaft so that its speed is positively synchronized with the revolutions of the rear truck wheels, helping to assure a uniform density of spreading pattern regardless of the speed driven—in forward or reverse. Called the Model J, it has an over-all width of 8 ft and achieves a spread of 7 ft 6 in. It will mount on any standard dump body without alterations. — Highway Equipment Co., Cedar Rapids, Iowa



**ELECTRIC LEVEL**—A new type of electronic angle measuring instrument called Stewart's Electric Level has been announced for use on motor graders and other types of road-building equipment. The device consists of two separate units, a protractor level head and a lighthouse. In operation the light panel instantly records any change in elevation through the blinking action of three bulls-eye lights, thus permitting the operator to make required adjustments instantly. The device is said to be extremely accurate. Tests on motor graders showed that even unskilled operators can grade to within 1/8-in. accuracy with the use of this instrument. Both units are made of cast aluminum and are weather-proof. The level may be set to angles from 0 to 180 deg or from 0 to 30% grade.—Electro-Level Corp., Sebastopol, Calif.





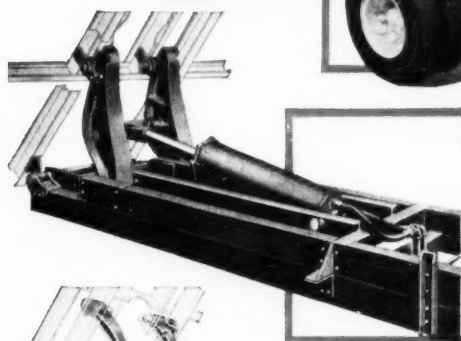
# A Complete Line of PERFECTION HOISTS

*for  
every Make  
and Model  
Truck*

All parts of PERFECTION Hoists — pumps, power take-offs, and cylinders are engineered and guaranteed by PERFECTION. Each part is carefully inter-designed with all other parts, to produce units of exceptional efficiency, power, and dependability.

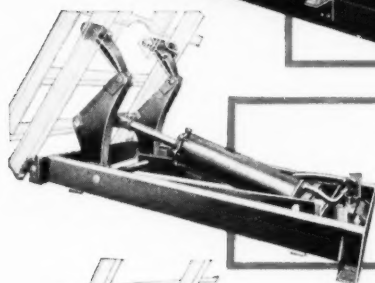
## Model 7780 Telescopic

3-stage, telescopic, dual cylinder design provides tremendous lifting capacity with least weight, simple construction, and smooth operation. Direct upward lift is applied at the center of the load. For mounting on trailers with bodies up to 30 cu. yard capacity. Extra heavy-duty service.



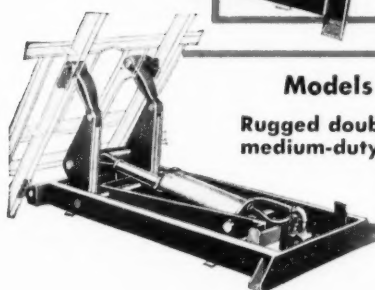
## Models 727 • 827 • 1027 • 1034 Roll-A-Lift

A constant-low-pressure-type hoist that develops tremendous lifting capacity in relation to its piston displacement. Engineered for those jobs that require a rugged and powerful hoist. Four standard models cover body capacities from 6 to 20 cu. yards. Heavy-duty service.



## Models 725 • 820 • 825

Compound-type, double lift-arm design, for medium and heavy-duty service. Three standard models for body capacities of 6 and 7 cu. yards.

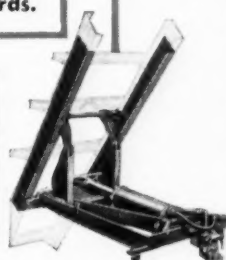


## Models 615 • 715 • 715L • 720

Rugged double lift-arm hoists for light and medium-duty service. Four standard models cover body capacities from 1½ to 6 cu. yards.

## Models 615B 715B • 720B

Low-mount, double lift-arm hoists for mounting with medium and heavy-duty platform and stake bodies. Three models for bodies from 9 ft. to 16 ft. long.



Write for Literature Today

TRUCK BODIES and  
HYDRAULIC HOISTS

**PERFECTION**  
LINE

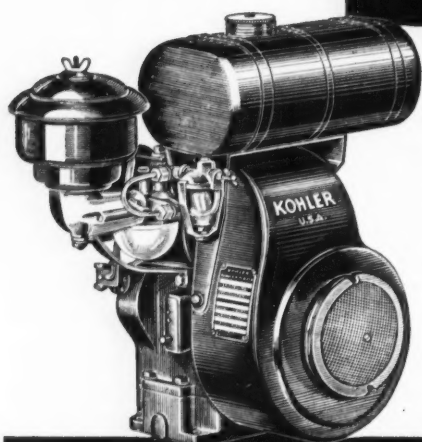
STANDARD and SPECIAL UNITS  
IN ALL SIZES — FOR ANY USE

Engineered, Manufactured  
**THE PERFECTION STEEL BODY CO.**

and Guaranteed by  
**Dept. M-83, Galion, Ohio, U.S.A.**

## 4-Cycle Air-Cooled

# KOHLER ENGINES



Power for garden tractors, mowers, pumps, sprayers, snow removal equipment, elevators and hoists, mobile saws, concrete mixers, compressors, feed grinders, industrial and lift trucks, and a wide range of tools and equipment for industry, construction, farm and home.

Engineered and built to the quality standards that have won acceptance for Kohler Electric Plants the world over.

Write for information.

Kohler Co., Kohler, Wisconsin  
Established 1873

## KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS  
AIR-COOLED ENGINES • PRECISION CONTROLS

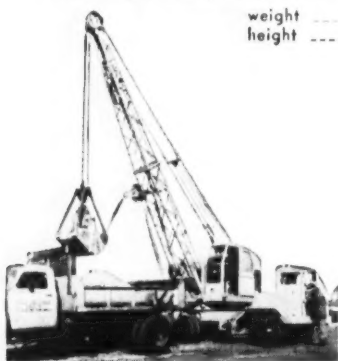
meet the . . .

# HEAVYWEIGHTS

### ★ BOB FITZSIMMONS ★

heavyweight champion of the world 1897-1899

weight ..... 167 lbs.  
height ..... 5'11 3/4"



**WAYNE CRANE . . . heavyweight**  
champion of the 1/2-yard, 12 1/2-ton class  
—1946-TODAY!

37,985 lbs. as a Model 40 clamshell proves it! Ask any owner to tell you his experiences with Wayne Crane—he'll tell you it's his Champion money-maker. Your dealer will give you a list of Wayne Crane owners doing your kind of work—call them at our expense—place an order for your next crane-excavator on the basis of what they tell you.

Also available in the heavy-duty line—Model 20, 10-ton, self-propelled, wheel-mounted; Model 66, 8-ton, crawler-mounted.

Plan now to check with a Wayne Crane owner before you buy!

Mfd. by **WAYNE CRANE DIVISION, AMERICAN STEEL DREDGE CO. INC.**  
FORT WAYNE 1, INDIANA

**SEE YOUR WAYNE CRANE DEALER TODAY!**

Complete service and parts facilities are maintained by Wayne Crane Distributors in all principal cities



**CAM ACTION SAW** — Completely eliminating the use of gears, a cam action saw attachment has been developed that converts the rotary power of an electric drill to a thrust-action saw. It can be attached directly to any heavy-duty electric drill for fast cutting of metal, stainless steel, plaster, nails, transite, masonry, lath plastic or other materials. Each revolution of the power drill is turned into a 7/8-in. stroke by the cam action of the saw. The attachment is light, easy to handle and weighs only 3 1/2 lb.—**E-Z Way Tool Co., Barrington, Ill.**

**PLASTERER'S TOOL** — The new Superior Featheredge is claimed to be the fastest, lightest, easiest handling tool of its type, according to a west coast plastering contractor. It is made either of aluminum or magnesium in lengths from 5 to 8 ft. The five-footer in aluminum weighs only 3 3/4 lb., and the magnesium one weighs only a scant 2 1/2 lb. It is smooth, well constructed and will not warp or rust from exposure to sun or water.—**Superior Scaffolding Co., Culver City, Calif., or National Plaster Block Co., Philadelphia, Pa.**



**ON THE LEVEL**—A new mason's leveling device which, according to the inventor, will greatly increase both speed and quality of any brick or block work is now available. The device which straps on to the back of the bricklayer's hand, has two levels so that the brick or block can be leveled in both directions. It's claimed to eliminate guess work leaving both hands free as in normal operations.—**Handy Mason's Level, 371 E. Becher St., Milwaukee, Wis.**

# CONTRACTOR'S COMPETITIVE TESTS

## PROVE HEILINER SUPERIORITY

**FASTER LOADING  
FASTER DUMPING**

**FASTER  
CYCLES**

**BIGGER  
PAYLOADS**

### TEST CONDITIONS

Haul road 1200-ft. one way  
400-ft. with 2% adverse grade  
400-ft. with 2% favorable grade  
Material—Wet clay mixed with  
sand. 15% swell factor.  
Yardage to be moved—  
400,000 yds.

### COMPARE THESE RESULTS

	Loading Time	Dumping Time	Complete Cycle	Rated Heaped Scraper Capacity	Average Payload
HEILINER	.57	.30	4.87	18-yd.	50,350 lbs.
UNIT A	1.26	.40	6.38	20-yd.	46,500 lbs.
UNIT B	1.09	.39	4.98	21-yd.	49,750 lbs.
UNIT C	.74	.40	6.25	18-yd.	48,250 lbs.

Time in minutes and hundredths of minutes

ONCE again Heiliner Scrapers top the field in earthmoving performance. In a day-long competitive demonstration of self-propelled, rubber-tired scrapers, recently conducted by a prominent mid-western contractor, the Heiliner 2C800 proved conclusively that its faster loading features, its "tilting floor" positive forced ejection, its bigger payload capacity . . . in fact, its entire over-all design . . . pay the best dividends in production and economical performance on the toughest earthmoving jobs.

In addition to these concrete figures (compiled by the contractor's engineer) your Heiliner distributor can give you further details about Heiliner automotive design, ease of operation, simplicity of maintenance and all the other "extras" that keep you on top of every job.

## THE HEIL CO.

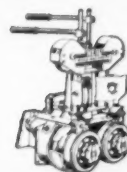
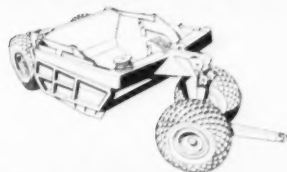
Dept. 283, 3002 W. MONTANA ST. • MILWAUKEE 1, WIS.

Factories: Milwaukee, Wis. — Hillside, N. J.

Sales Offices: New York, Union, N. J., Washington, D. C., Atlanta, Cleveland, Milwaukee, Detroit, Chicago, Kansas City, Denver, Dallas, Los Angeles, Seattle; Rio de Janeiro, Brazil.

R-1

ASK YOUR HEIL DISTRIBUTOR FOR COMPLETE DETAILS OF OTHER HEILINER ADVANTAGES



13 AND 18-CU. YD. HEILINER SCRAPERS 20-CU. YD. HEILINER BOTTOM DUMP WAGON 4, 9, 17 AND 18-CU. YD. TRACTOR DRAWN SCRAPERS CABLE POWER CONTROL UNITS



# Operator reports:



## 25,900 trouble-free hours!

**B**ACK in July 1950, the George M. Brewster Company, Inc., put to work three 18-yard scrapers equipped with Allison TORQMATIC DRIVES. At the same time, this New Jersey contractor converted four 13-yard bottom-dump trucks from mechanical drives to TORQMATIC DRIVES.

And to date these seven units have piled up 25,900 trouble-free hours—a record far surpassing experience with mechanical drives.

This high-availability record has paid big dividends by lowering operating costs. Performance records like this tell why many operators are now insisting on Allison TORQMATIC DRIVES in their new equipment. If you are not familiar with all the advantages of these drives, get the full details from your equipment manufacturer or dealer or write to:

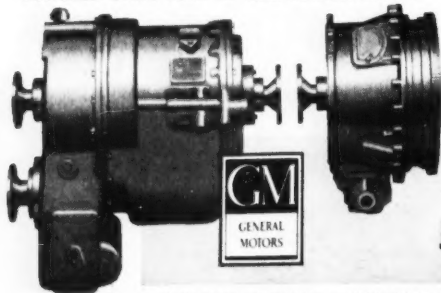
ALLISON Division of GENERAL MOTORS  
Box 894TT, Indianapolis 6, Indiana

### ALLISON TORQMATIC DRIVES

*Unbeatable Team for Maximum  
Operating Economy*

- \* Quick-shifts at full throttle with fingertip hydraulic control.
- \* Holds power to load at all times—no clutch pedal to push—no gearshift guess.
- \* Cuts maintenance cost by absorbing shock—eliminates engine lugging—prolongs equipment life.
- \* Only torque converter-transmission team designed to work as a unit and built by one manufacturer.

MATCHED UNITS BUILT BY ONE MANUFACTURER



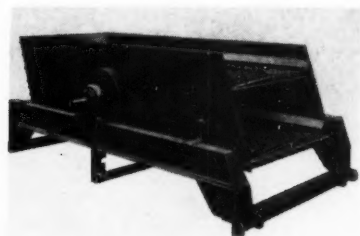
## Allison TORQMATIC DRIVES



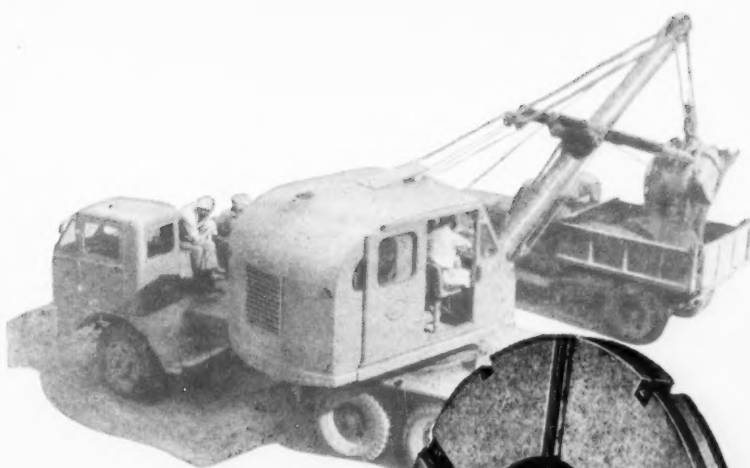
COMPACT, EFFICIENT HYDRAULIC DRIVES FOR CRANES • TRUCKS • TRACTORS • SHOVELS • SCRAPERS • DRILLING RIGS



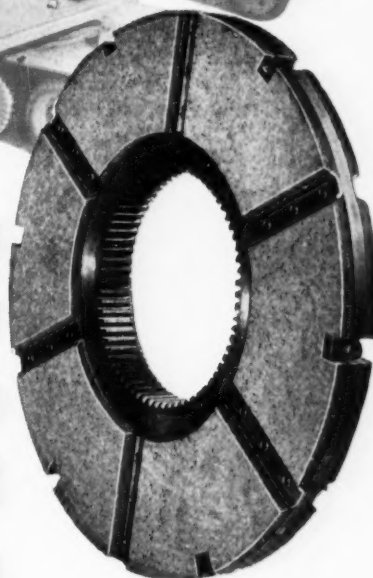
**IMPROVED PANEL** — Announcement comes from the Universal Form Clamp Co. of a new improved Uni-Form Panel. A special rolled-tee angle, with an equal-legged tee strut, provide additional structural rigidity to the portion of the frame which acts as a plywood protector. The added protection to corners and edges of the plywood increases the life of the plywood assuring greater re-usage and lower maintenance cost.—**Universal Form Clamp Co., 1238 N. Kostner Ave., Chicago 51, Ill.**



**NEW VIBRATING SCREENS**—Undergoing field tests for the last 2 yr, a new 5-ft wide series of vibrating screens available in 10-, 12- and 14-ft lengths is now being produced. They are adaptable for any installation and can be had in 1, 2, 2½ or 3 decks. Specifications include Timken double-row roller bearings; rubber-mounted main bearing cages; adjustable-spring balance cup; and screen



## Thermoid helps Michigan Power Shovel with this unusual clutch design



Every day, all year 'round, Michigan Power Shovels and Cranes deliver the extra output that completes tight schedules on time.

Thermoid helped Michigan's engineers develop a single disc, double faced 12-segment clutch. With the experience of half a century in making friction materials for special applications like this, Thermoid was able to produce a long wearing, stable friction material which is ideal for the heat compensating and quick change features of Michigan's clutches.

Thermoid makes a complete line of woven, molded and special types of Clutch Facings and other Friction Materials. Superior construction, plus close cooperation on individual problems, makes Thermoid the choice of leading manufacturers in many fields.

# Thermoid

**Thermoid Company**  
Industrial Friction Materials Division  
Trenton, N.J.

## ARE YOU GETTING SAVINGS LIKE THESE?

**H**ere's a contractor who is... with a MICHIGAN Truck Excavator-Crane.

On the Elk River Bridge Project, Garrett & Farris Company of Knoxville, Tennessee, uses it's MICHIGAN to pour concrete... strip forms... charge the batcher... excavate for pier foundations... load materials at a rail siding four miles distant and unload back at the job... sort pilings and supply the pile driver... position the pile puller when needed... all in a day's routine.

And look at some of the savings:



**ONLY 3 MEN NEEDED ON BATCHING AND POURING.**

**A HALF-HOUR JOB THAT FORMERLY TOOK HALF A DAY... here the MICHIGAN reduces labor costs 80%.**



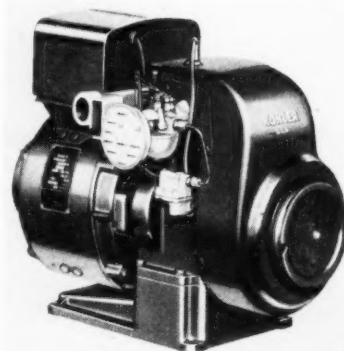
**75% MAN-POWER SAVINGS BY HANDLING STRIPPED FORMS with the MICHIGAN.**



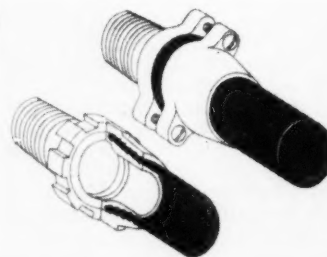
When it's versatility and savings you want... investigate MICHIGAN... you'll agree it's your best buy!

**MICHIGAN POWER SHOVEL COMPANY**  
495 Second Street, Benton Harbor, Michigan, U. S. A.

clamp bars over the center supports. Side plates are 5/16 in. and there is a 5/16-in. throw on the shaft. Shaft dimensions are 4 1/2 in. at the main bearings; 5 1/4 in. at the pitman bearings; 5 3/4 in. between the pitman bearings and 3 7/16 in. at the fly-wheel. The screens can be driven with either V- or flat-belt drive.—Diamond Iron Works, Inc., 1748 N. Second St., Minneapolis, Minn.



**NEW ELECTRIC PLANT**—Specially designed for various portable and semi-portable jobs requiring electric power generated at the site, Kohler Co., is manufacturing a new 1,000-w electric plant known as model 1A21. It is automatic, starting when any lamp bulb, appliance or motor connected to the plant is turned on. It is available for gasoline or natural gas operation.—Kohler Co., Kohler, Wis.



**NON-SLIP FITTING** — Barracuda-type brass fittings offer a new way to connect plastic piping. Designed so that the barracuda teeth grip the plastic inside and outside of the pipe, it is claimed the plastic cold flow property which has formerly made non-slip joints so difficult, has been overcome. A feature also claimed by the manufacturer is that the flow through the pipe has not been cut down, as the fittings require no space inside the pipe. The fittings can be easily removed and used many times. The sleeve is slipped over the pipe and the tapered adapter or coupling inserted in the pipe. As the sleeve is tightened, the set-back barracuda teeth grip the pipe permanently. They come in sizes from 1/2 in. up to 2 in.—Nelson Foundry Co., 6116 Oakton St., Morton Grove, Ill.



# "On-the-Job" Sawing Center Costs Only 10¢ per hour with **DELTA Radial Saw**

\$1,300,000 construction with saw investment of approximately \$400 at Metcalfe-Hamilton Construction Companies in Kansas City, Mo.

A job-site sawing center with Delta radial saws mass-cuts material, frees carpenters for actual construction, says Raymond D. Sharpe, manager of this project to erect three apartment buildings totaling 172 units.

"For excellent performance, ease of operation, safety, versatility and economy, Delta radial saws can't be beat," says Mr. Sharpe. "Our on-the-job installation costs only 10 cents per hour—does cross-cutting, ripping, beveling, dadoing

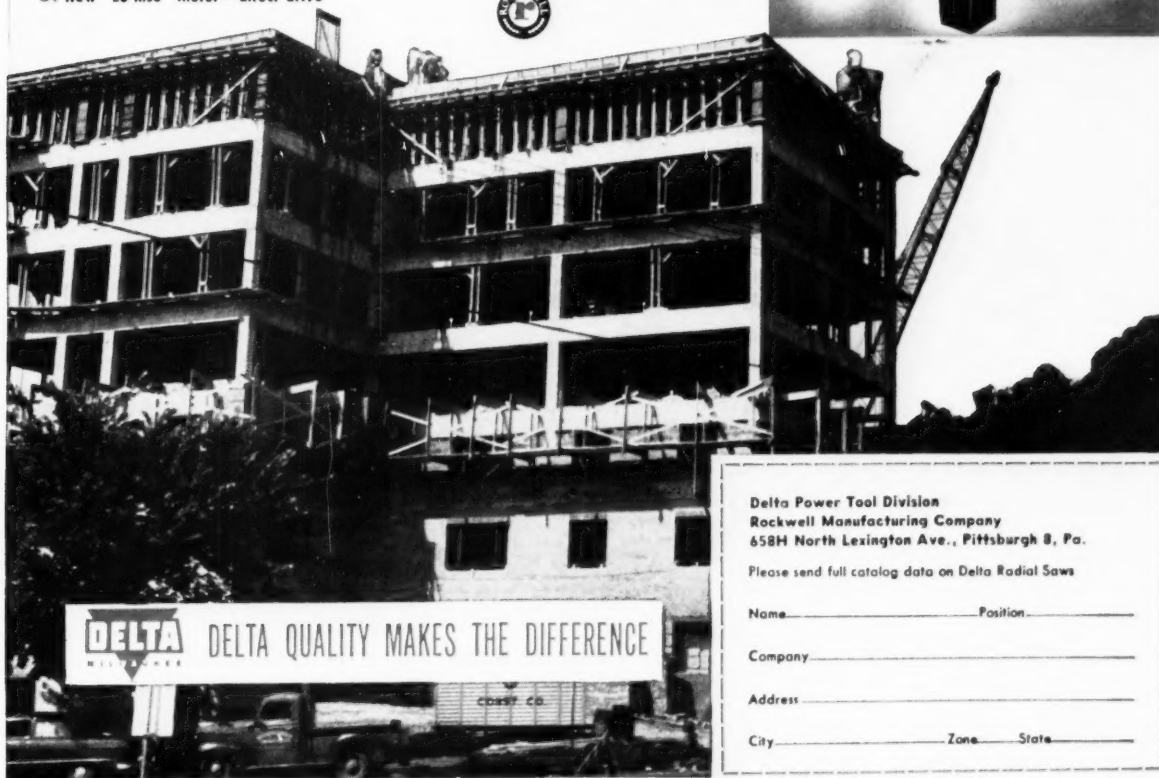
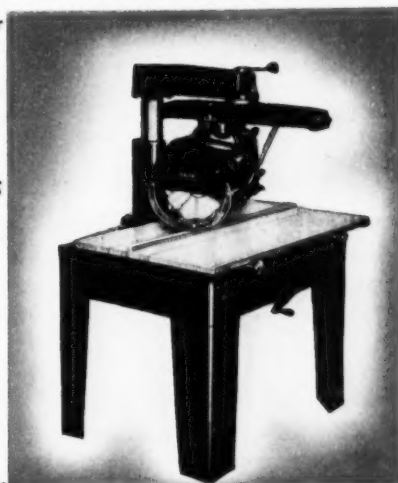
and general mill work. In 4000 hours of hard use, the only maintenance, except for blade wear, was one new switch."

Here, truly, is the way to cut costs, as live-wire builders the country over are discovering to their profit. Use the coupon to get complete data on Delta radial saws.

## ONLY WHOLLY NEW RADIAL SAW ON THE MARKET—Check these advantages

1. Exclusive—the saw blade is always **above the table**, swing a full 360° for any angle.
2. Controls up front, for ease and safety
3. Bigger capacity
4. Hardened "life-time" trackways
5. New "Lo-Rise" motor—direct drive
6. Quick-set stops—30°, 45°, 60°, 90°
7. 8", 10", 12", 14", 16" models; power range ½ to 7½ H.P.

**DELTA** QUALITY POWER TOOLS  
Another Product of **Rockwell**



DELTA QUALITY MAKES THE DIFFERENCE

Delta Power Tool Division  
Rockwell Manufacturing Company  
658H North Lexington Ave., Pittsburgh 8, Pa.

Please send full catalog data on Delta Radial Saws

Name \_\_\_\_\_ Position \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

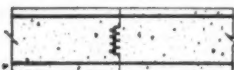
just nail 'em in...  
pour your concrete



AND FORGET ABOUT SEEPAGE  
WITH LABYRINTH  
WATERSTOPS

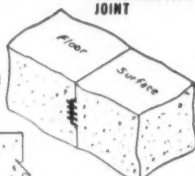
● Concrete shrinkage can't cause leakage between pours when you're protected by ribbed and grooved polyvinyl plastic Labyrinth Waterstops in the joints. Economical? You bet . . . No special forms, no metal fins to bend or tear . . . no maintenance cost, AND . . .

INSTALLATION COST IS VIRTUALLY ZERO!



FOUR RIB LABYRINTH WATERSTOP IN VERTICAL CONSTRUCTION JOINT

FOUR RIB LABYRINTH SHOWN IN FLOOR SLAB



COMPLETED JOINT

**WATER SEALS, inc.**  
9 SOUTH CLINTON STREET  
CHICAGO 6, ILLINOIS

For Further Information and Sample—Clip the Coupon!  
Patent applied for



WATER SEALS, INC.  
9 South Clinton St., Chicago 6, Illinois  
Send full information and sample.

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

**CONCRETE ANCHOR STUDS**—Development of special concrete anchor studs designed to simplify fabrication and improve the quality of steel curb angles, trench frames, column guards, joists and other structural members to be anchored in concrete or masonry has been announced by the Nelson Stud Welding Division of Gregory Industries, Inc. High-quality, cold-drawn steel, with a tensile strength of 75,000-80,000 psi, is used in the new fluxed anchor studs which are welded in the angle or on the faces of steel members without causing any distortion. Simple table-mounted production units designed for use in fabricating shops will install anchor studs at the rate of 4 to 5 per min. Architectural details from which specifications for anchor studs can be obtained are available from Gregory Industries, Inc., Lorain, Ohio

**AIR COMPRESSOR**—A new 25-hp stationary air compressor for general industrial applications has been announced by Davey. The unit has a displacement of 128 cfm and is connected to a 25-hp electric motor. It can be had with constant speed or start-and-stop pushbutton controls as desired. It weighs 1,635 lb.—Davey Compressor Co., Kent, Ohio

**VIBRATORY PAVING TUBE**—Jackson Vibrators, Inc., have introduced a more powerful vibratory paving tool which they claim is being received with great favor by contractors. The vibratory tube assembly, which attaches to either the front of a finisher or the rear of a spreader, consists of two to five vibratory elements, according to the width and depth of slab, each embodying two close parallel tubes on which is mounted a powerful, vibratory motor. Current is supplied by a power plant mounted on the parent equipment. Advantages claimed are greater compressive strength and impermeability of the hardened concrete of the dryer, uniform compaction of concrete with no mortar streaks, faster finishing progress and reduction of spreading time.—Jackson Vibrators, Inc., Ludington, Mich.

★ ★



**U. S.  
DEFENSE  
BONDS**

★ ★

**NOW EVEN BETTER**

## HOW TO HANDLE WET JOBS

#19 of a series

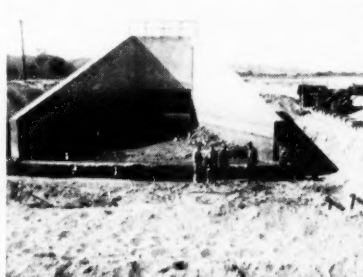
### BRIDGE PIER COFFERDAM

Winona, Minn.

Contractor: James Construction Co.



**BEFORE DEWATERING.** Earth cofferdam is shown around damaged and tilted center pier of bridge which had been washed away by Mississippi Spring floods. Griffin Wellpoint system (see photo, right) has 640-ft perimeter.



**WITHIN 12 HRS.** the 2 pumps have brought water below subgrade, wresting 5000 gal per min from the very coarse sand and gravel.

IN INSTALLATION, the wellpoints on this job had to be driven the last few feet, through gravel. Fortunately, Griffin's is the only point specifically designed for driving as well as jetting. Contractor was thus enabled to "breeze through" what might otherwise have proved a big headache.



**WELLPOINT CORP.**

881 East 141st Street, New York 54, N. Y.  
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

In Canada: Construction Equipment Co., Ltd.  
Toronto Montreal Halifax

**AT NEW YORK INTERNATIONAL AIRPORT . . .**

# American Welded Wire Fabric makes drainage pipe last longer



**REINFORCED CONCRETE PIPE** is used extensively for separate, combined, and storm sewerage systems. It is also used for drains adjacent to highways or railroad tracks, and for airport drainage systems.

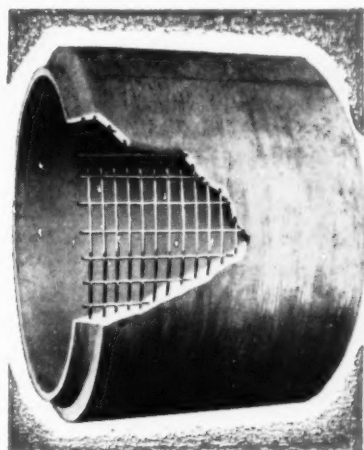
**DRAINAGE PIPE** being installed at New York International Airport. Concrete pipe reinforced with American Welded Wire Fabric was used for most of the drains at this huge airport. This pipe resists cracking and can withstand heavier loads than ordinary concrete pipe.

**N**EW YORK International Airport is big. And most of the 4900 acres of it are drained through reinforced concrete pipe that is strengthened with American Welded Wire Fabric.

Reinforcement with American Welded Wire Fabric assures strong, durable concrete drainage pipe. High tensile steel wires, securely welded at every intersection, add strength to

the pipe, prevent serious cracking, and increase the service life of the pipe. This fabric is used to increase the life of highway, railroad, and airport drains, storm sewers, and sewage force mains.

For extra strength and durability in *your* concrete pipe, make sure it is reinforced with American Welded Wire Fabric. It meets applicable A.S.T.M. Specifications.



**THE MESH** of strong steel wires in American Welded Wire Fabric distributes load stresses more evenly throughout the pipe. It provides a better bond with the concrete than ordinary wire reinforcement.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION, GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS

UNITED STATES STEEL EXPORT COMPANY, NEW YORK



**EVERY TYPE OF REINFORCED CONCRETE CONSTRUCTION NEEDS**

## U-S-S AMERICAN WELDED WIRE FABRIC

UNITED STATES STEEL





## Move a Mountain



*or Push  
Some  
Pebbles*

Whatever the job, there's a SHUNK blade designed to do it efficiently and economically. For almost a century SHUNK has been manufacturing a full line of fine cutting edges rolled from top-quality steel to fill any maintenance or construction need . . . whether it's gravel, dirt, shale, snow or rocks.

Original equipment manufacturers specify them because of their durability . . . contractors use them because of their dependability . . . distributors like to sell them because they're priced right and deliveries are prompt.

Write us for recommendations on the proper SHUNK blade for your job.

**3,000 DIFFERENT SPECIFICATIONS**



SCARIFIER BLADES



GRADER BLADES



SNOW PLOW BLADES  
BULLDOZER BLADES



# Shunk MANUFACTURING COMPANY

*In Our 99th Year*

**BEST BLADES MADE**

**BUCYRUS, OHIO**

## New PUBLICATIONS From MANUFACTURERS

The catalogs and bulletins reviewed below will keep you posted on latest developments in construction equipment and materials available for your use.

**MASONITE**—A 12-p booklet on production economies in factory maintenance, materials handling and materials processing has just been printed. Labeled, "How to Improve Factory Methods with Masonite Presdwood," the illustrated booklet enumerates many applications of the 23 types and thicknesses of Presdwood for various purposes.—**Masonite Corp.**, 111 W. Washington St., Chicago 2, Ill.

**AIR VIBRATORS**—Application of air vibrators in the concrete, construction building and concrete product industry is reported in a 6-p folder. Title of the book is "Bin Stuck Lately?" and it carries the form number 106.—**Cleveland Vibrator Co.**, 2828 Clinton Ave., Cleveland, Ohio.

**GAR WOOD**—A catalog showing the 15 models of cable and hydraulic dozers and three models of control units available for AC tractors has just been announced. This new publication is extensively illustrated with cut-aways, engineering drawings, detailed and on-the-job photos. Request catalog F-165.—**Gar Wood Industries, Inc.**, Wayne, Mich.

**STEEL MILL IN A HURRY**—A new 16-p booklet describing the part Uni-Form Panels and Universal Service played in helping build one of the largest steel mills in a hurry is available. Its pictorial presentation covers all phases of the structure.—**Universal Form Clamp Co.**, 1238 N. Kostner Ave., Chicago, Ill.

**EXPANDABLE CONCRETE FORMS**—A new 8-p booklet describing the advantages of Rubora expandable concrete forms is available. The expandable form consists of wooden struts that are latticed together and hinged at the intersection points. They can be used up to 100 times.—**Kurt Orban Co., Inc.**, 205 E. 42nd St., New York 17, N. Y.

**HEAVY-DUTY DUMP BODIES**—St. Paul Hydraulic Hoist has just put out a new 3-color, 8-p descriptive catalog on its complete line of heavy-duty dump bodies and hoists for on- and off-highway service. Included in the literature is the regular St. Paul line of heavy-duty underbody arm-type hoists, as well as

*(Continued on page 163)*

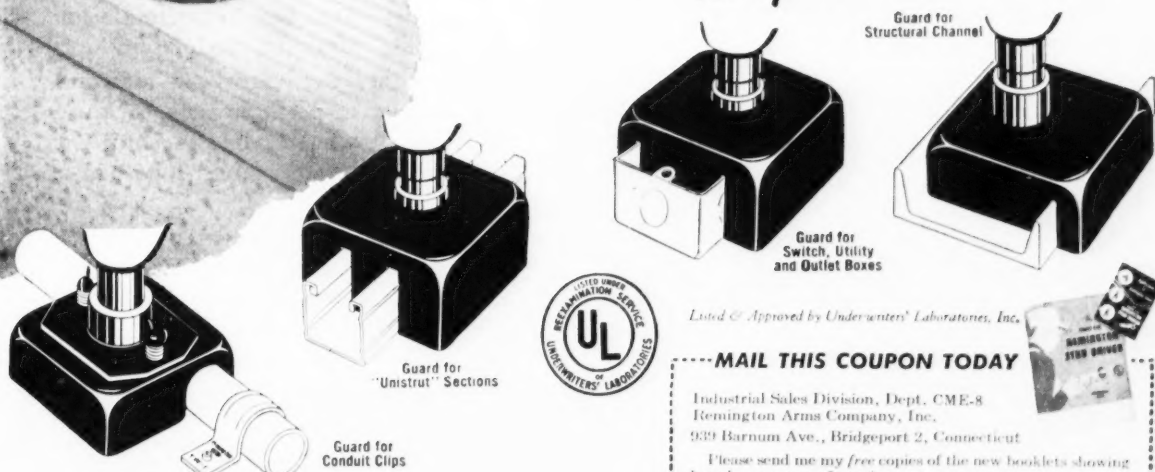
Now...set fastening studs  
wherever they're needed

# MODEL 450 REMINGTON STUD DRIVER

Here's new economy...new speed in construction fastening! The Remington Stud Driver joins wood or steel sections to concrete or steel surfaces in seconds...easily sets as high as 5 studs a minute. Powerful 32 caliber charges drive studs arrow-straight. The tool's light weight—only 5½ pounds—simplifies handling wherever studs are needed.

New guards for specific uses now make the self-powered Remington Stud Driver more versatile than ever. These attachments take all the guesswork out of stud location...assure fast, accurate fastening for every job. Illustrated are just 4 of these special guards. For full information about the complete line and about the Remington Stud Driver, send the coupon below.

*A complete line of guards  
for special applications*



Listed & Approved by Underwriters' Laboratories, Inc.

## MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. CME-8  
Remington Arms Company, Inc.  
939 Barnum Ave., Bridgeport 2, Connecticut

Please send me my free copies of the new booklets showing how I can cut my fastening costs.

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Firm \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

"If It's Remington—It's Right!"

**Remington** **DUPONT**



PALISADES DAM — Two Model 4500's owned by J. A. Jones and C. H. Tomkins each handling over 10,000 yds. in 20 hr. shifts.



CHIEF JOSEPH DAM — Model 4500 Dragline owned by Columbia River Constructors, on a really tough excavation job at this huge dam near Bridgeport, Wash.



FOLSOM DAM — Model 4500 Dragline owned by Merritt-Chapman & Scott-Savin, loading trucks. Another Manitowoc 3900 also on job.

There's a big switch to Manitowoc all over the country — big jobs, small jobs — big contractors, small contractors — are all replacing with mighty Manitowocs.

They've found what they're looking for — the power and speed for big yardage — the extra heavy, rugged construction for long life — the simplicity of design for lower operating costs — the quick convertability for greater versatility — the ease of operation for operator comfort and productivity.

No other excavator can match a Manitowoc in performance — because no other excavator has the built-in features and extra values found in a Manitowoc.

May we prove it to you? Send for catalogs on the mighty Manitowocs, now. Manitowoc Engineering Corp., Manitowoc, Wisconsin.

# MANITOWOC

SHOVELS  
1-5 YD.

*Speed Crane*

CRANES  
18-100 TON



(Continued from page 160)

their Hi-Dumper hoists, together with a complete complement of dump bodies. Five models of single and double cylinder hoists in the conventional line offer capacities from 8 to 27½ tons. For additional facts write to **St. Paul Hydraulic Hoist, Customer Service Dept., Wayne, Mich.**

**INSTRUMENT FOR CONCRETE—**Two folders, one describing an air meter for measuring the air content in concrete, and the other an A.E.A. dispenser to insure proper gage-water addition can be obtained from **E. W. Zimmerman, 228 N. LaSalle St., Chicago 1, Ill.**

**PIPE AND PIPE FABRICATION—**Specifications of all sizes of pipe from ½- to 24-in. dia are included in a new catalog titled, "Pipe and Pipe Fabrications." Tables giving data and description, wall thickness, weight, etc., cover all schedule pipe from Schedule 20 through Schedule 160. Also standard extra-strong and double extra-heavy pipe, spiral-weld pipe, large OD pipe in all wall thicknesses, line pipe, electric-weld tubing, welding fittings and flanges, oil-well and water-well casing. American Petroleum Institute specifications are listed in the catalog for casings and oil country tubular goods. Standard merchant pipe specs are those of the American Society for Testing Materials. The 16-p catalog also describes pipe fabrication facilities for structural uses, including portable docks, sewer inlets, fence posts, hand railings, stadium bleachers, racks, road signs, portable scaffolding, street lighting poles and sprayer supports. You can get a copy of this booklet from **L. B. Foster Co., Pittsburgh, Pa., New York, N. Y., Chicago, Ill., or Houston, Tex.**

**FIVE NEW DRIVES—**To introduce five new friction and hydraulic drives for powered equipment used in the major industries, Twin Disc Clutch has just released a special 16-p New Products issue of Production Road, its house magazine. The new Twin Disc drives include a two-stage hydraulic torque converter; a new two-speed transmission to obtain extended full-range performance from three-stage torque converters; a new disconnecting hydraulic power take-off to provide a higher capacity, more compact disconnecting fluid drive for powered equipment; a better air-actuated clutch, offering lighter weight and more narrow clutch width with higher torque capacity; and a new oil-actuated multiple plate clutch, incorporating an integral cylinder to eliminate adjustment and provide constant torque capacity, more compactness, longer wear life and adaptability to remote control. Address your request to **Twin Disc Clutch Co., Racine, Wis., or Rockford, Ill.**

## THERE'S A MALSBARY STEAM CLEANER TO MATCH YOUR WORK LOAD



### Here's how others use them...

**Equipment Distributor (above)—**"For five years, our MALSBARY 300 has averaged 45 hours weekly, winter and summer, doing heaviest industrial cleaning and degreasing," reports Geo. W. Crothers, Ltd., Toronto.

**Open Pit Mining—**Fast action of MALSBARY 250 makes it practical to steam clean "crawlers" once every 24 hours, blast away abrasive grease, mud and iron ore from tracks, thus increase roller life from 1200 to 2400 hours in Mesabi Range.

**Contractor—**Mud freezes overnight in uncleaned scrapers on an Ontario winter job, causes cable breakage and costly downtime. Two MALSBARY 250's solve the problem for King-Brenaman by steam cleaning 47 big rigs nightly.

**Sewage Plant—**MALSBARY Series 500 and 300 units steam clean scum, dirt and grease from walls, sedimentation and digester tanks, and melts sludge in connecting pipes for San Francisco and Oakland treatment plants.

**6 Sizes—**No matter what your cleaning work load, there's a MALSBARY tailored to your exact needs. Choice of steam vapor and heavy duty cleaners from—

- ▶ 100 to 400 lbs. pressure
- ▶ Operating temperatures: tap water to 325°F.
- ▶ 100 to 2100 gallons per hour

See for yourself—  
fill in coupon now



Room C-8, 845 92nd Ave., Oakland 3, Calif.

Malsbary Mfg. Co., Room C-8, 845 92nd Ave., Oakland 3, Calif.

I AM INTERESTED IN —

- ☐ On-the-job demonstration.
- ☐ Free booklets on MALSBARY Cleaners.
- ☐ "How To Make Efficient Use of Steam Cleaning" reprint.

NAME

POSITION

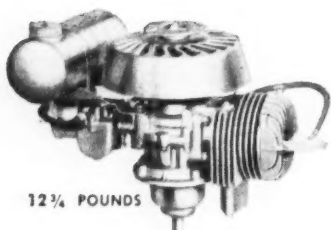
BUSINESS

ADDRESS

**MAIL  
TODAY!**

48

**be modern-  
go Lightweight**



12 3/4 POUNDS



**The POWER PRODUCTS Lightweight packs more power per pound**

When it comes to lightweight power nothing can touch this engine. Not only is it amazingly lightweight, but it has every important quality feature to assure long, dependable performance

- LIGHTWEIGHT
- MINIMUM EFFORT STARTING
- LONG LIFE, LESS MAINTENANCE
- FULL CARBURETION
- BALL BEARING MAIN BEARINGS
- SEALED DRIP PROOF CRANKCASE
- FULLY ENCLOSED, FLY-BALL GOVERNOR
- NO OIL CHANGING OR CHECKING
- CLOG FREE COOLING SYSTEM



For portable equipment, you can't find a better engine for lightweight and dependability.

**be modern -  
go Lightweight**

**POWER PRODUCTS CORPORATION**  
GRAFTON, WISCONSIN

## STERLING CARTS

For Wheeling Concrete and other Materials

**IT STANDS ALONE**

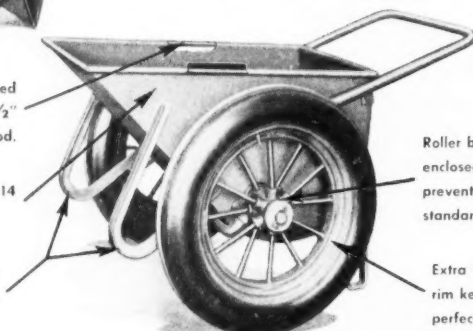


Investigate the unusually sturdy construction of this perfectly balanced cart. It's the best that money can buy. Outlives any other cart. That's why it costs less. Choice of 30" dia. steel wheels or pneumatics. Illustration shows No. 626-PR Cart with dumping rockers and pneumatic tires, 6 cu. ft. capacity, water full. Eight other models. Write for Catalog No. 63.

Top edge reinforced with continuous 1/2" dia. butt-welded rod.

Tray is made of 14 gauge steel.

1 1/4" T-iron rockers facilitate dumping and cleaning out.



Roller bearings, enclosed in cage to prevent locking, are standard equipment.

Extra heavy steel rim keeps wheel in perfect alignment.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.



Look for this Mark of STERLING Quality

**Sterling**  
WHEELBARROWS

**TELLS ALL**—Everything a professional welder, hobbyist or an experimenter needs to know in order to properly apply any of eleven alloys, including silver, solder and their companion fluxes, a galvanizing powder for gas welding, brazing, soldering and tinning all the commercial metals, will be found in a new small folder called, "How to Use and Apply the All-State Alloys and Fluxes." The small publication condenses into lay language all the highly technical instruction usually seen in text-book size.—**All-State Welding Alloys Co., Inc., White Plains, N. Y.**

**PIPE CUTTING**—An improved principle in pipe cutting is claimed in a new envelope enclosure recently released. The folder describes how Beaver's pipe cutters are constructed so that the cutting wheel is fed directly into the pipe for easier and quicker cutting. You can get the folder by writing directly to **Beaver Pipe Tools, Inc., Warren, Ohio.**

**SLINGS**—A 4-p folder, packed full of sling data, pictures and drawings of various types, called "Slings for Industry" is informative, handy, compact and is a ready reference folder.—**Maewhyte Co., Kenosha, Wis.**

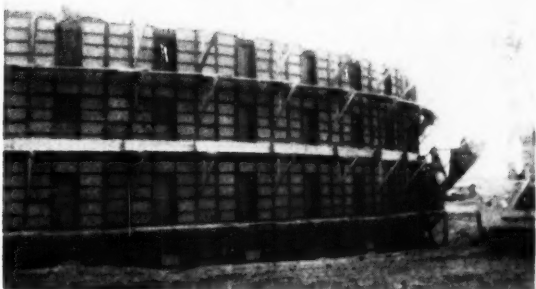
**MOVIE ON ROAD REBUILDING**—A new sound-color movie illustrating the Hyster Grid Roller method of salvaging aggregate and binder in old bituminous surfaces; and a new faster way to compact road fills, sub-bases and rolling surface courses, has just been produced by Hyster. Arrangements to book the movie can be made at any Caterpillar-Hyster dealer.—**Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.**

**DITCHERS**—A new catalog showing all nine models of Buckeye ditchers has been announced by Gar Wood Industries, Inc. Well illustrated with action and still photos, catalog shows the many types and sizes of ditchers available, digging speeds, digging depths, widths, etc. There is also data on engines, horsepower, machine weights and ground-bearing pressures. Ask for form F-167.—**Customer Service Dept. Gar Wood Industries, Inc., Wayne, Mich.**

**PREVENTIVE MAINTENANCE**—Euclid has prepared and is distributing an elaborate preventive maintenance kit for Euclid owners. A 24-p booklet describing what to do on 100- to 4,000-hr checks is complete with pads of forms to be filled in by maintenance mechanics. As a theme Euclid uses "An ounce of prevention is worth a pound of cure" and proves it by the valuable information and tips contained in the packet.—**The Euclid Road Machinery Co., Cleveland 17, Ohio**

# Versatile

## Atlas Compo Forms make any shape



### SOME SPECS. ON ATLAS COMPO FORMS

Heights, 4', 5', 6', 7', 8'.  
Widths, 12", 16", 18", 24".  
Panels interchangeable, no rights or lefts.  
Panels of different heights can be combined.  
For low, high, round, rectangular structures, and for slabs.  
Pilasters, inserts, easily accommodated.  
Inside and outside corners, steel fillers and special shapes available from stock.

### IRVINGTON FORM & TANK CORPORATION

#### Compo Form Division

20 Vesey Street, New York, N. Y.

Whether your concrete construction is rectangular, round, hexagonal, irregular, slab, battered — use the same quick-erecting, easy stripping Atlas Compo Forms over and over again for all the different shapes.

Tough, though lightweight, the panels consist of plastic-faced plywood framed and reinforced with pressed steel channels. You don't need walers, you don't need wood wedges, you don't have to drive any nails. One row of double 2 x 4's maintains alignment.

Easy to work with, a pleasure to handle, Atlas Compo Forms do a quicker, satisfactory, money-saving job. They eliminate on-the-job irritations.

Let's tell you more. Our engineers are glad to help with any concrete job or any form problem.

Seen our "Concrete Checker"? There ought to be one hanging in your office and in the construction shanty or toolshed. Free on request.

### Ask us to send documented Case History Cost Data of on the job savings

Irvington Form & Tank Corp.  
20 Vesey St., N. Y. C. Dept. Q-8

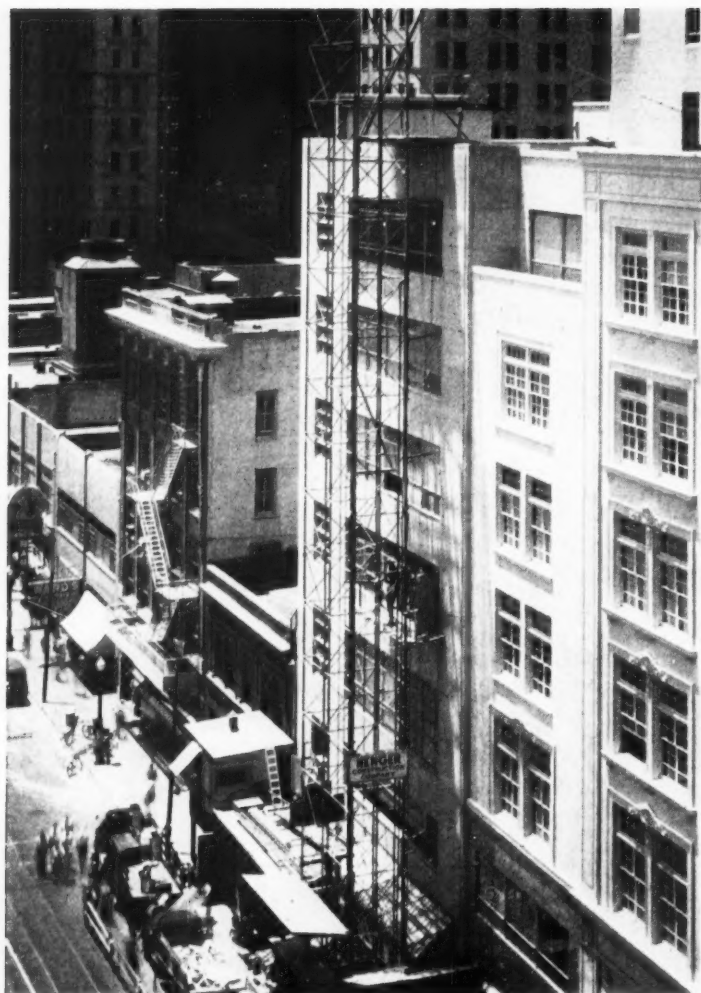
Please send ☐ Folder on Atlas Compo Forms.  
☐ Concrete Checker Card ☐ Man to see me.  
☐ Cost Case Histories

NAME \_\_\_\_\_

FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_





## Clyde Hoist Speeds Construction on World Famous Store

Fast, safe handling of building materials and supplies play an important part in construction schedules. The Neiman Marcus project in Dallas, Texas, was no exception. To stay ahead of schedule, to lower building costs and to keep materials moving swiftly and economically, the Henger Construction Company used a Clyde double drum gasoline hoist to handle all supplies on the construction of this sumptuous home for a world famous fashion center.

Clyde Hoists are preferred by contractors everywhere for their rugged and efficient design that provides for long lasting service with a minimum of maintenance.

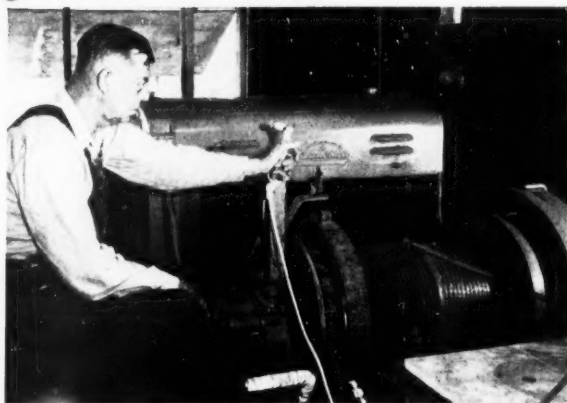
Operators like them for their ease and simplicity of operation that permits fast and accurate spotting of loads.

Write for Circular MP-48 and get all the information and 'specs' on Clyde Hoists. Then you will know why contractors refer to them as 'Quality Plus' hoists.

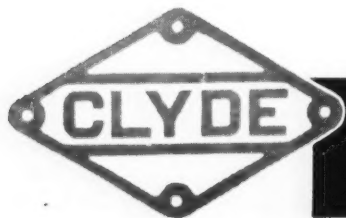
## Clyde Hoists Have Long Life Built In

Every part of a Clyde Hoist has been carefully engineered for the duty it is to perform . . . the result, a well balanced machine of exceptional lasting qualities. Clyde Hoists are available in one, two and three drum models with nominal line pulls up to 30,000 pounds.

No matter what size Clyde Hoist fits your requirements, you will find a Clyde is fatigue-free in operation. This makes for greater safety on the job . . . permits the precision spotting of more loads with substantial savings in time and money.



"Very satisfactory" is the comment made on the performance of this Clyde Hoist. It has operated almost constantly on job after job ever since it was purchased.



Hoists • Derricks • Whirleys • Builders Towers • Car Pullers • Handi-Cranes • Rollers •  
**CLYDE IRON WORKS Inc.**  
 DULUTH MINNESOTA  
SUBSIDIARY OF BARIUM STEEL CORP.

#### ELECTRODES POCKET GUIDE—

Picking the right electrode is a matter of analyzing the conditions applying to a particular job and then determining the type and size of electrode best suited to those conditions, according to a 50-p booklet available on Airco electrodes. Over 30 different electrodes, stainless, mild and high-tensile steels, cast iron, non-ferrous, low hydrogen and hard-surfacing are described as to chemical analysis, procedure for welding and application. A copy of this illustrated guide, form ADC 650, can be obtained by writing **Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y.**

#### WIRE ROPE RECOMMENDATIONS

—Based on years of research and continuous study of various jobs wire rope has to do in the excavating business, Macwhyte wire rope engineers have prepared an excellent 20-p handbook of recommendations. Rope constructions, Lang Lay vs Regular Lay, clamshell buckets, plus recommendations for excavating equipment are all included in this practical pocket-size edition. Copies are free.—**Macwhyte Co., F. J. Nelson, Kenosha, Wis.**

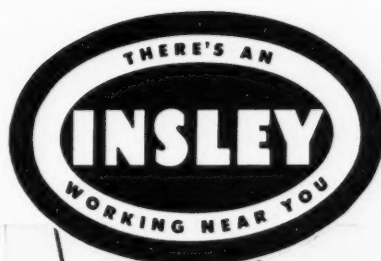
#### GM DIESEL ENGINE OWNERS—

A preventive maintenance log book for General Motors diesel engine owners outlines the servicing operations recommended for the engine at specified intervals. Space is provided for easy recording of operations when completed, a running record of hours operated and repairs made, and amounts of diesel fuel and lube oil used. Complete information on GM diesel operation including the GM torque converter is included. The book may be obtained from GM Detroit Diesel Sales and Service outlets or by writing direct to the factory.—**Detroit Diesel Engine Div., General Motors Corp., 13400 W. Outer Dr., Detroit 28, Mich.**

**MEET THE HEAVYWEIGHTS** is the title of a new 8-p booklet illustrating in color the heavy-duty, self-propelled, wheel-mounted Wayne crane Model 20. It is the first in a series of new literature which will combine many on-the-job applications that have been proved by crane owners.—**Wayne Crane Div., American Dredge Co., Inc., Fort Wayne, Ind.**

#### LINER PLATES FOR TUNNELS—

How tunneling is simplified by the use of Armco liner plates is described in a newly issued bulletin called, "Why Throw a Road Block on Traffic and Business?" The piece contains illustrations of various types of installations, including aggregate bins and conveyor tunnels, for which liner plates have been widely adopted. Copies may be obtained from **Armco Drainage & Metal Products, Inc., Middletown, Ohio**



ON A  
CONSTRUCTION  
PROJECT



The Insley Line includes excavators and cranes, 5 to 30 ton capacity • rubber or crawler mounted • gasoline, diesel or electric powered. There's an Insley working near you on a construction project.

**INSLEY MANUFACTURING CORP. • INDIANAPOLIS**

wholly owned subsidiaries

THE MAXI CORPORATION, LOS ANGELES • SIX WHEELS, INC., LOS ANGELES



## ASPHALT PLANTS

Complete units for maintenance and moderate contract paving. Sizes—4, 8, 15, 30 tons per hour.

### Other Products

## CONCRETE VIBRATORS

Gasoline Engine and Electric Motor Driven Models

## HEATING KETTLES

for Asphalt and Tar

## AGGREGATE DRYERS

for Stone and Sand

## FRONT END LOADERS

for Industrial Tractors

WRITE FOR CIRCULARS

White Mfg. Co.

ELKHART 6

INDIANA

**Puts POWER where you want it**

... at low cost!

"US" Electric Plants have earned their reputation for dependability under all kinds of working conditions. You'll find the right unit for your needs in the complete "US" line . . . AC and DC units from 300 watts to 200 kw. Write for information.

**UNITED STATES MOTORS CORP.**

602 Nebraska St. Oshkosh, Wis.

**METAL HOSE**—Titeflex helically wound flexible metal hose and Uniflex helically corrugated flexible metal hose are illustrated and described in form 200 just released. The catalog also contains information for ordering flexible metal conduit and ferrules, hose assemblies, ignition shielding and components for reciprocating engines, bendable pipe and high- and low-frequency leads. Also included in the booklet are convenient business reply cards for ordering.—Titeflex, Inc., 500 Frelinghuysen Ave., Newark 5, N. J.

**WELDDIRECTORY FOR HARD SURFACING**—A 20-p Weldom directory 466 covering hard surfacing has just been issued. Highlights of the bulletin are a general discussion in the Preface to Arc Weld Surfacing and a new chart on hard surfacing guide. Also contained is a new material on hard surfacing fluxes.—The Lincoln Electric Co., 22801 St. Clair Ave., Cleveland, Ohio

**WELDING ALUMINUM**—Any engineer familiar with the welding of the older metals will find all he needs to know about welding, brazing and soldering aluminum in the new 186-p process manual "Welding Aluminum," which is a revised edition of the manual originally published in 1946.—Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.

**TRUCK MIXERS**—A recent bulletin, covering Blue Brute truck mixers and a specification sheet for the Blue Brute 3½-S end-discharge tilting mixer are now being offered. The bulletin, R1700-B13, thoroughly describes and illustrates both the LC and LO models of inclined-axis, truck-mounted concrete mixers. Many of the improved design features of the mixers are illustrated by photos and cut-away drawings indicating details of each.—Worthington Corp., Construction Equipment Div., Plainfield, N. J.

**BETTER COOLING FOR HIGH-DUTY ENGINES**—A rugged, dependable thermostatically controlled fan drive for heavy-duty engines to help maintain the coolant temperature at the most efficient level is available for certain models of Cummins, Detroit Diesel, Buda, Caterpillar, Waukesha and Hall-Scott. Full information can be obtained by asking for form 558.—Schwitzer-Cummins Co., 1125 Massachusetts Ave., Indianapolis 7, Ind.

**GIRDERS**—A new type of form support for construction of reinforced concrete or precast block floors, ceilings and arches is described in a late bulletin on Hico Girders. It has a design and erection data table and gives comparative cost of Hico Girders as against wood shoring.—Webbie Steel Corp., 120 Broadway, New York 5, N. Y.

## Helping you solve today's toughest CONSTRUCTION PROBLEMS

The reference aid that helps you save time and money on construction jobs



With the construction work that lies ahead for every engineer, it is only up to you to assure yourself of superior workmanship—ensure your work of the finest structural qualities—by providing yourself with this revision of the famous Hool and Kinne Library—the books which for years have been providing structural engineers with the facts they need on every problem concerned with the design and construction of civil engineering structures.

HOOL AND KINNE'S

## STRUCTURAL ENGINEERS'

## Handbook Library

Revised by R. R. ZIPPRODT,

And prepared by a staff of sixty-three well-known engineers, each a specialist in his field.

- 6 volumes
- 3763 pages
- 2719 illustrations
- 63 contributors

FOR years the Hool and Kinne Library has been providing structural engineers with the facts needed on every problem concerned with the design and construction of civil engineering structures.

All six volumes give you figures, diagrams, charts and tables illustrating important principles and procedures.

Assuring your work of the finest structural qualities. The library:

- **COVERS**—the how and why of foundation and substructure design and construction, general theory of structural members and detailed design of such members.
- **EXPLAINS**—the principles of statics, reactions, moments and shears in beams and trusses, influence lines, methods of computing stresses in lateral trusses and portal bracing.
- **GIVES**—details of design and construction of steel, timber and concrete structures of all types.

SEE THESE BOOKS 10 DAYS FREE

Save \$9.50—Purchased separately . . . these books would cost \$48.50. Use the coupon below and get entire set for \$39.00, payable in easy installments.

Send for all six books and inspect them for yourself. It is the one way you can realize their value, to you.

McGraw-Hill Book Co., Inc.  
330 W. 42 St., N. Y. 36

Send me Hool and Kinne's STRUCTURAL ENGINEERS' HANDBOOK LIBRARY, 6 volumes for 10 days' examination on approval. If the books prove satisfactory I will remit \$4.00 in 10 days, and \$7.00 monthly until \$39.00 is paid. Otherwise I will return books postpaid.

(Print)

Name .....

Address .....

City .....

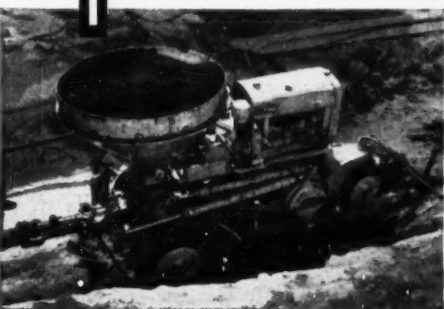
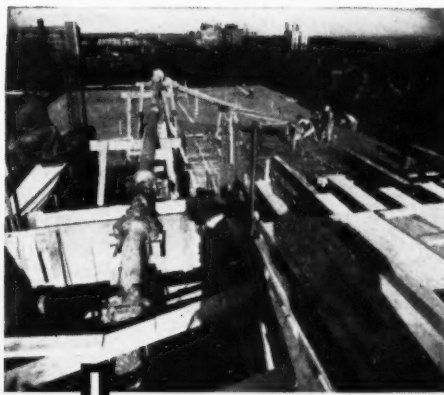
Zone ..... State .....

Company .....

Position .....

This offer applies to U. S. only. CM-8





**Here's the low cost way  
to place concrete**

## eight stories up!

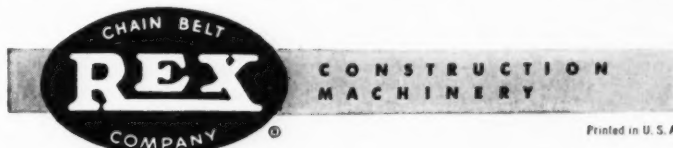
Here's how Rex Pumpcrete® helps slash the cost of concrete placement on this modern apartment building. Pumpcrete is placed in convenient location outside the building where it can be charged easily by a Rex Moto-Mixer®.

Pipe line is extended up inside the building floor by floor as pouring is completed.

Upper view shows pouring in progress on the top floor. Thus no expensive lowers are needed...no bugging...no interference with other crews...costs are cut all along the line.

Rex Pumpcrete—concrete by pipe line—has proved to be the lowest cost method of concrete placement in hundreds of different applications. Apartment building construction is just one example. Others include hospitals, schools, public buildings of all kinds, tunnels, bridges, viaducts, dams, factories and many more.

Get all the details on the Pumpcrete method and how it can help you cut costs on your next job. Write today for Bulletin 53-36, Chain Belt Company, 4664 W. Greenfield Ave., Milwaukee 1, Wis.



Printed in U. S. A.



Rear and front views of Safety-Beam installed along secondary road in Pennsylvania.

## Plan for Safety at Danger Points

with  
*Safety-  
Beam*

Wherever danger lurks along a highway—at sharp turns, embankments, bridge approaches—you can provide extra protection for motorists with Bethlehem Safety-Beam Guard Rail.

Sturdy Safety-Beam sections lock together in a continuous beam ready to meet the thrusts of runaway vehicles. These heavy sections of steel plate are bolted together on steel, wood or concrete posts to form a continuous impact-absorbing beam. When a vehicle strikes Safety-Beam, impact is absorbed by several adjacent posts, making it next to impossible to crash through the rail.

Safety-Beam is clearly visible at all times. It's easy to install, too, even by unskilled labor. No end anchor rods, special tools or complicated adjustments are required.

For more information about Bethlehem Safety-Beam Guard Rail—and other road-steel products—call the nearest Bethlehem sales office, or write to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by  
Bethlehem Pacific Coast Steel Corporation  
Export Distributor: Bethlehem Steel Export Corporation*

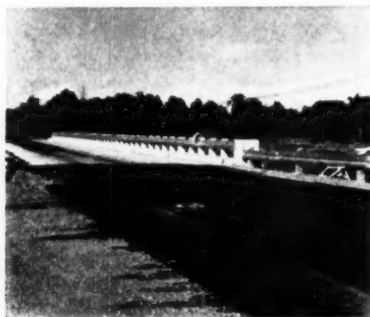
## STEEL FOR HIGHWAYS

Dowel Units • Reinforcing Bars • Guard Rail Posts  
Bar Mats • Guard Rail • Wire Rope and Strand  
Hollow Drill Steel • Spikes • Bolts and Nuts • Pipe  
Sheet- and H-Piling • Fabricated Structural Steel  
Timber Bridge Hardware • Tie-Rods



Traffic using approach to Chesapeake Bay Bridge, Maryland, has Safety-Beam protection.

Safety-Beam Guard Rail protects motorists at this small bridge on Route 79, in Arkansas.



## Advertisers in this Issue

A McGRAW-HILL PUBLICATION



Member of Associated Business Publications  
and Audit Bureau of Circulations

<b>A</b>	
Acrow, Inc.	80, 81
Adams Mfg. Co., J. D.	111
Advance Scaffold Div., Beaver	
Art Metal Corp.	149
All Purpose Spreader Co.	134
Allis-Chalmers (Tractor Div.)	10, 11, 119
Allison Div., General Motors	154
American Air Filter Co., Inc.	
(Herman Nelson Div.)	74
American Chain & Cable	
(American Cable Div.)	135
American Manganese Steel Div.	
American Brake Shoe Co.	32
American Steel & Wire Div.	
United States Steel Co.	159
Armstrong Products Co.	129
Austin-Western Co.	145
<b>B</b>	
Baker Mfg. Co., The	122
Baker-Ross, Inc.	12
Barber-Greene, Inc.	16
Baron Mfg. Co.	82
Bay City Shovels, Inc.	30
Bayley Blower Co.	172
Beaver Art Metal Corp.	
(Advance Scaffolding Div.)	149
Bethlehem Steel Co.	35, 170
Blaw-Knox Co.	
(Blaw-Knox Equipment Div.)	6
(Foote Construction Equip. Div.)	83
Borden & Riley Paper Co.	
(Kern Drawing Instrument Div.)	146
Borne, Strymer Co.	91
Bros. Boiler & Mfg. Co., Wm.	33
Bucyrus-Erie Co.	130, 131
Buda Company	2nd Cover
Bullard Co., E. D.	4
Butler Bin Co.	68
<b>C</b>	
Caterpillar Tractor Co.	21, 28, 69, 99
Chain Belt Co.	169
Chevrolet Motor Div., General Motors	34
Chrysler Corp. (Industrial Eng. Div.)	115
Cities Service Oil Co.	143
Clyde Iron Works, Inc.	166
Construction Machy Co's.	136
CONSTRUCTION METHODS	
and Equipment	112, 113
Crucible Steel Co. of America	126
<b>D</b>	
Dodge Div., Chrysler Corp.	47
<b>E</b>	
Electric Tannery & Equipment Co.	
(Jackson Vibrators, Inc.)	171
Euclid Road Machinery Co., The	13
<b>F</b>	
Felker Manufacturing Co.	137
Foote Construction Equipment	
Div., Blaw-Knox Co.	83
Ford Motor Co. (Ford Div.)	71
Funk Aircraft Co.	144
<b>G</b>	
Gar Wood Industries, Inc.	
(Findlay Div.)	84, 85
Goodrich Co., The B. F.	
(Industrial Products Div.)	1
(Truck Tire Div.)	8
Gradall Div., Warner & Swasey Co.	41
Griffin Wellpoint Co.	158

(Continued on page 172)

## WHERE TO BUY

## STOP that WATER

With FORMULA NO. 640, a clear liquid which penetrates 1" plus in concrete, brick, stucco, plaster, etc. Seals out water, dirt. Holds 20' head. Use outside and in. Preserves all absorbent materials. Sold 14 years. Quick, economical, sure. \$1 in 55¢. Free sample. See Sweet's. HAYNES PRODUCTS CO., OMAHA 3, NEBR.

FOR QUICK,  
CONVENIENT  
COMPACTION  
of BLACKTOP  
in HIGHWAY  
WIDENING  
and PATCHING,  
DRIVES,  
WALKS, ETC.



# JACKSON VIBRATORY COMPACTOR

Small as it is, this extremely powerful machine will compact bituminous mixes close to maximum density at the rate of 2400 sq. ft. per hour. Self-propelling, the operator has only to guide it. Operated from a Jackson Power Plant mounted on auto trailer

with quick pickup of Compactor, it is highly mobile and a tremendous time-and-money-saver on such jobs as indicated at left. In granular soils it quickly achieves maximum density, and since it is available with quickly interchangeable bases from 12" to 24" wide, it is easily adaptable to a wide variety of applications. Write for the complete facts on this exceptionally advantageous piece of equipment.

And . . .  
GRANULAR SOIL  
FILLS, IN  
BRIDGE  
APPROACHES,  
PIPE LINES,  
TRENCHES,  
CONCRETE FLOOR  
SUB-BASES, ETC.



JACKSON  
VIBRATORS Inc.

LUDINGTON, MICHIGAN



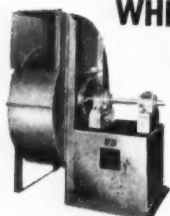
**Consult**

**Bayley**

**For Your**

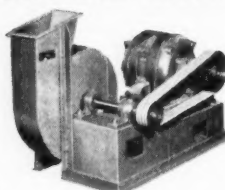
**BLOWER Requirements**

**WHEN YOU BUILD FOR PROJECTS LIKE THESE:**

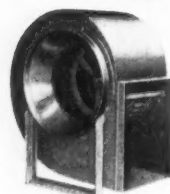


**Basic and Process Industries**

- Exhaust Ventilation
- Pneumatic Conveying
- Industrial Exhausters
- Pressure Blowers



**Manufacturing Plants, Utilities**



**Public Buildings**

- General Ventilation
- Air Conditioning
- Ventilating Fans
- Ventilating Sets

- Mechanical Draft
- Plant Ventilation
- Heavy-Duty Blowers
- General Purpose Fans

**VERSATILE!**—Each of these BAYLEY installations can be adapted interchangeably for any of your projects in the above categories.

You need the BAYLEY Catalog of Air Handling Equipment for complete specification data. Send for your copy today.

**Bayley**

**BLOWER COMPANY**

Engineered Air-Handling Equipment

6605 W. Burnham St. • Milwaukee 14, Wis.

**JACKSON**  
**MIXING BOXES**  
and  
**MORTAR PANS**



**MIXING BOXES**

Sides and bottom formed from single sheet of steel. Top corners reinforced by rounded malleable castings. Top edges are flanged out and down for reinforcing and forming a good hand hold.



**MORTAR PANS**

Pressed from 16 gauge steel with reinforced edges. Lightweight, easy to clean and handle, non-leakable. Rounded corners for safety.

**THE RIGHT  
COMBINATION  
FOR FAST, EFFICIENT  
MORTAR WORK**

**Jackson**

MANUFACTURING COMPANY

HARRISBURG, PENNA.

Oldest and Largest Wheelbarrow Maker in America

**Advertisers Index**

(Continued from page 171)

<b>H</b>	
Harnischfeger Corp. (Diesel Div.).....	38
Haynes Products Co.....	171
Heil Company, The.....	153
Heltzel Steel Form & Iron Co., The.....	175
Hercules Powder Co., Inc.....	109
Hopkins Volcanic Specialties, Inc.....	149
Hough Co., The Frank G.....	133

<b>I</b>	
Ingersoll-Rand Co.....	147
Insley Mfg. Corp.....	167
International Harvester Co., Inc. (Industrial Power Div.).....	88, 89
Ivington Form & Tank Corp.....	165

<b>J</b>	
Jackson Mfg. Co.....	172
Jackson Vibrators, Inc.....	171
Jaeger Machine Co., The.....	17
Johnson Co., C. S.....	22, 23

<b>K</b>	
Kawneer Co., The.....	48
Koehring Co.....	23
Kohler Co.....	152
Kwik-Mix Co.....	23

<b>L</b>	
Laclede Steel Co.....	90
LaCrosse Trailer Corp.....	150
Lebus Rotary Tool Works, Inc.....	118
LeTourneau-Westinghouse Co.....	76, 77, 78, 79
Link-Belt Speeder Corp.....	100
Lone Star Cement Corp.....	5

<b>M</b>	
McGraw-Hill Book Co., The.....	168
McKiernan-Terry Corp.....	120
Macwhyte Co.....	65
Madsen Iron Works, Inc.....	173
Mall Tool Co.....	93
Malsbary Mfg. Co.....	174
Manitowoc Engineering Corp.....	162
Marlow Pumps.....	75
Marquette Cement Mfg. Co.....	36
Master Builders Co.....	3rd Cover
Michigan Power Shovel Co.....	156
Minneapolis-Moline Co.....	29
Moretrench Corp.....	19

<b>N</b>	
Nelson Herman Div., American Air Filter Co., Inc.....	74
North America, Indemnity Insurance Co. of.....	104
Northwest Engineering Co.....	7

<b>O</b>	
Oliver Corp., The (Industrial Division).....	2, 3
Owen Bucket Co.....	18

<b>P</b>	
Pacific Car & Foundry Co.....	125
Paris Mfg. Co.....	117
Parsons Co.....	23
Patent Scaffolding Co., Inc., The.....	116
Perfection Steel Body Co., The.....	151
Porto Pump, Inc.....	94
Powder Power Tool Corp.....	95
Power Products Corp.....	164

<b>R</b>	
Ramsel Fasteners, Inc.....	148
Reinhart Co., Inc. Paul (Kern Surveying Instrument Div.).....	146
Remington Arms Co., Inc. (Industrial Sales Div.).....	161
Rockwell Mfg. Co. (Delta Power Tool Div.).....	157
Rogers Brothers Corp.....	98

<b>S</b>	
Safway Steel Products, Inc.....	105
St. Anthony Machine Products Co.....	124
Schild Bantam Co.....	138, 139
Servicised Products Corp.....	144
Shell Oil Co.....	107
Sherman Products, Inc.....	142
Shunk Mfg. Co.....	160
Sinclair Refining Co.....	96
Skil Corp.....	129
Smith Co., The T. L.....	44
Standard Dry Wall Products.....	92
Standard Oil Co. (Indiana).....	173
Stang Corp., John W.....	40
Sterling Wheelbarrow Co.....	164
Superior Concrete Accessories, Inc.....	86
Superior-Lidgerwood-Mundy Corp.....	108
Symons Clamp & Mfg. Co.....	72

(Continued on page 174)

**They're on the right track!** Mr. G. G. McAfee (left), official of Winston Brothers Company, and Mr. Tom Gearhart, Standard's Automotive Engineer, have worked closely together to make "molehills" out of mountainous lubrication jobs.



## **They made "Molehills out of Mountains!"**

To bring water from the Colorado River to the eastern plains of Colorado, men and machines have driven a 13-mile tunnel through the Rockies, hacked out vast reservoirs, and built great dams of earth and rock fill. They have literally made "molehills out of mountains!"

Winston Brothers Company, Constructors and Engineers, of Minneapolis, has played a major role in this vast construction project. Important to the successful operation of Winston Brothers' wide array of equipment has been Standard Oil's fleet lubrication service and the performance of STANOLUBE HD-M Motor Oil. Despite continuous operation of equipment, severe overloads, high engine speeds, and exposure to dust, sand, and water; STANOLUBE HD-M has kept engines clean

and protected against wear. A minimum of maintenance has helped Winston Brothers keep equipment working on a basis of two 8-hour shifts, 6 days a week.

Standard's fleet lubrication service has accomplished the imposing job of supplying the right lubricants for the right jobs right on schedule. A Standard Oil Automotive Engineer has worked closely with Winston Brothers to give them help when they needed it.

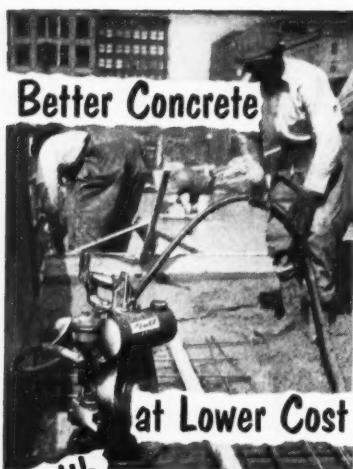
You can put Standard Oil's fleet lubrication service and STANOLUBE HD-M to work for you by phoning your local Standard Oil office. Or write: Standard Oil Company, 910 S. Michigan Avenue, Chicago 80, Illinois.

**STANOLUBE HD-M**  
REG. U. S. PAT. OFF.  
**Motor Oil**

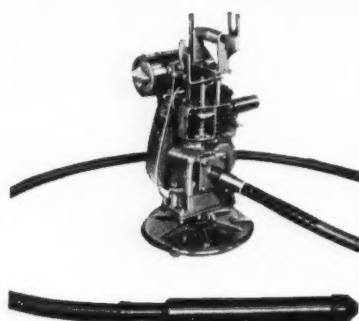
**STANDARD OIL COMPANY**



**(Indiana)**



**Better Concrete**  
at Lower Cost  
with  
**MALL**  
**CONCRETE VIBRATORS**



Save money with a MALL Vibrator—use less cement, coarser aggregate and produce better, more durable concrete. MALL Vibrators, producing up to 10,000 vibrations per minute, get jobs done faster, with less manhours. MALL Vibrators are available in three types—gasoline engine, electric or pneumatic. MALL gasoline engine units are available with attachments for surfacing, rubbing, pumping and many other time-saving jobs. Over a dozen models. Mail coupon—get full facts on all MALL construction tools.

40 Factory-Owned Service Warehouses, Coast to Coast, To Give You Fast, Dependable Service.

**Get More Information NOW!**

**MALL TOOL COMPANY**

7704 S. Chicago Ave., Chicago 19, Ill.

Send name of nearest MALL Dealer and information about MALL.

☐ Concrete Vibrators ☐ Chain Saws  
☐ Portable Tools

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

CU-26

## Advertisers Index

(Continued from page 172)

T	
Talbert Construction Equipment Co., The.....	121
Texas Company (Lub. Div.).....	14, 15
Thermoid Co. ....	155
Thew Shovel Co., The.....	25
Thurman Machine Co.....	70
Timken Roller Bearing Co.....	4th Cover
Traylor Engrg. & Mfg. Co.....	39
Twin Disc Clutch Co.....	123

U	
Union Metal Mfg. Co., The.....	37
Union Oil Co. (California).....	31
Union Wire Rope Co.....	26, 27
Unit Crane & Shovel Corp.....	106
United States Motors Corp.....	168
United States Steel Co.....	159
Universal Form Clamp Co.....	43

V	
Viber Company.....	108

W	
Warner & Swasey Co. (Gradall Div.).....	41
Water Seals, Inc.....	158
Waukesha Motor Co.....	24
Wayne Crane Div., American Steel Dredge Co.....	152
Wellman Co., The S. K.....	103
Wellman Engineering Co., The.....	124
White Co., David.....	120
White Mfg. Co.....	168
Whiteman Mfg. Co.....	73
Worthington Corp.....	(Construction Equipment Div.)..... 9

## SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment	
Positions Vacant.....	174
Educational	
.....	174
Equipment	
(Used or Surplus New)	
For Rent.....	174
For Sale.....	174

## CONSTRUCTION Methods and Equipment

E. E. WEYENETH, Advertising Sales Manager

HOWARD T. OLSEN, Business Manager

Sales Representatives: H. T. Buchanan, 330 W. 42nd St., New York; F. G. Hudson, Knox Bourns and David J. McGrath, 520 N. Michigan Ave., Chicago; R. E. Dorland, 68 Post Street, San Francisco; W. C. Bradford, 1510 Hanna Bldg., Cleveland; W. E. Donnell, Continental Bldg., St. Louis; H. L. Keeler, 1111 Wilshire Blvd., Los Angeles; Robert H. Sidur, 1321 Rhodes-Haverly Bldg., Atlanta; James Cash, First National Bank Bldg., Dallas. Other Sales Offices: Architects Bldg., 17th and Sansom Sts., Philadelphia; 738 Oliver Bldg., Pittsburgh; 856 Penobscot Bldg., Detroit; 350 Park Square Bldg., Boston 16; 95 Farringdon St., London, E.C. 4.

## SEARCHLIGHT SECTION

### EARTHMOVING FIELD ENGINEERS NEEDED!!

A major manufacturer of earthmoving equipment has immediate openings in its sales department for earthmoving field engineers. Responsible positions, within the continental United States, are available in connection with this Company's expanding sales program.

Earthmoving men with civil engineering degrees and experience in the application of heavy earthmoving equipment are desired.

Salary offered is commensurate with qualifications and experience. An account for traveling expenses is also provided. In addition, Company benefits including group hospitalization and life insurance plans, a contributory retirement plan, and annual paid vacations are available.

Send full particulars of education and business experience, with a recent photograph to—

### P-8468, CONSTRUCTION METHODS AND EQUIPMENT

330 W. 42 St., New York 36, N. Y.

### ENGINEERS—FOREMEN—OFFICE MEN

Learn latest methods to organize and run work. Prepare for the top jobs.

Send post card for details

Geo. E. DEATHERAGE & SON  
CONSTRUCTION CONSULTANTS  
411 So. 5th Ave., Lake Worth, Florida

### FOR SALE OR RENT, 1201 LIMA

1201 Lima, Wisconsin gasoline engine, completely rebuilt, excellent condition, 130' heavy duty boom, used as crane only, immediate delivery. F.O.B. Wilmington, Delaware \$10,000.00  
LUTHERVILLE SUPPLY & EQUIPMENT CO.  
LUTHERVILLE, MARYLAND

- 1—3-yard Challenge Mixer mounted on 1951 L-180 International, \$3,500.00.
- 1—3-yard Challenge Mixer mounted on 1950 L-160 International, \$3,000.00.
- 1—3-yard Jaeger Mixer mounted on 1947 3 Ton Dodge, \$2,500.00.

The Long Bell Lumber Company  
McAlester, Oklahoma Phone 2382

## EQUIPMENT—used-surplus

### FOR SALE

Deisels, Cummins, Model HBID-600, 150 HP fan to flywheel complete with starter, generator and transmission Fuller Model 8BS-860-4 speed and Live Railway clutch. In excellent operating condition. Removed from Euclid 9FDT trucks. \$1200 each, as is, F.O.B. New York. Griffin Equipment Corp., 880 East 141 St., New York 54, N. Y.

Heiliners, 5 units Heiliner Model 2C800 with Cummins 200 HP Diesel Engine, scraper Model D16, 17 cu. yd. capacity, 24.00 x 29-24 ply tires. Excellent condition. Rental purchase plan. Price each \$20,500.00. H. O. Penn Machinery Co., 140th Street & East River, New York 54, N. Y.

Payloader, Hough—Model HAH—1952—excellent condition—\$3,650.00. Theodore J. Burke & Son, Jamaica, N. Y.—Jamaica 6-5100.

Tanks—9 R.R. Car tanks 8000 & 10,000 gal. cap, with coils. L. M. Stanhope, Rosemont, Penna. Used concrete pavers, truck mixers, & pumperete. 19 Rector St., Rm. 1205, N.Y.C. Ph. WH 3-6141

Wanted construction equipment—Weber & Co. Box 8037 Chattanooga 11, Tenn.

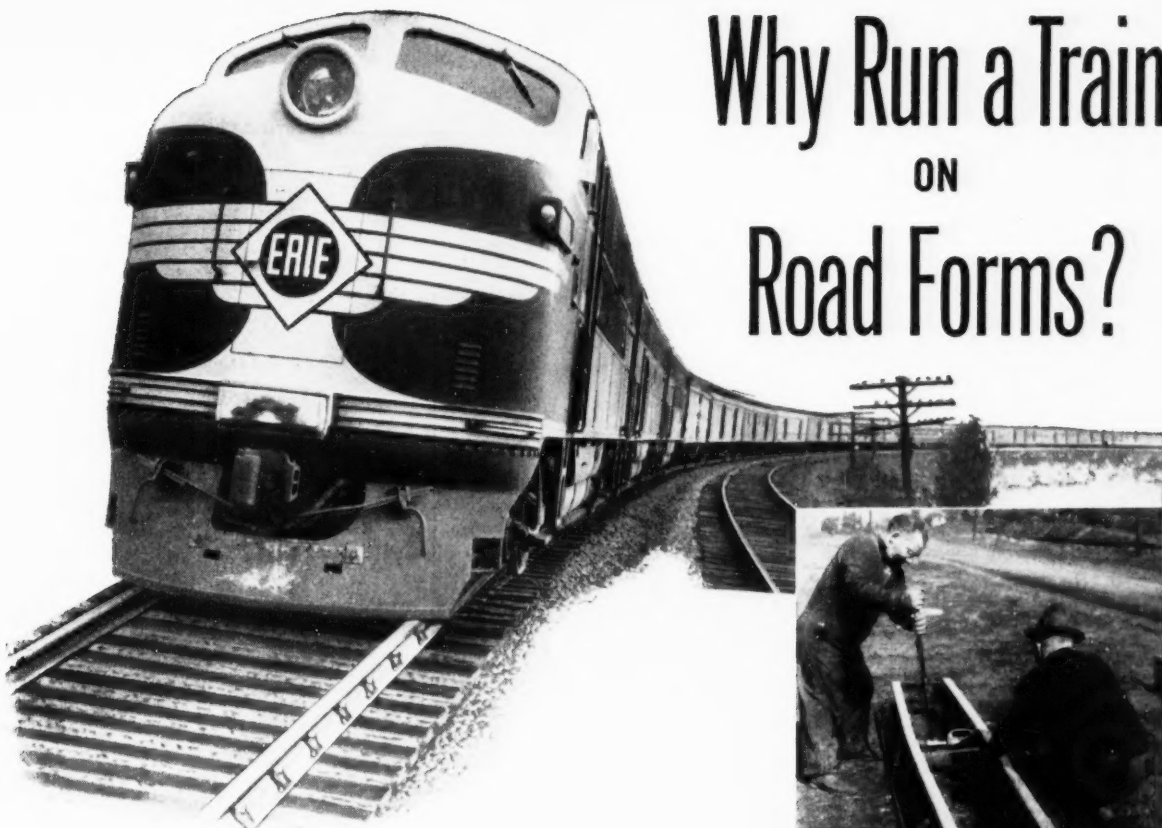
### FOR RENT

For Repairs, Rentals or used Surveying Instruments see: Buff, 69 Dey Street, New York City. Phone: Worth 2-2797.

### WANTED

ANYTHING within reason that is wanted in the field served by Construction Methods & Equipment can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.





# Why Run a Train ON Road Forms?

## Super-Strength HELTZEL ROAD FORMS LAST LONGER—REDUCE MAINTENANCE

Heltzel believed they built the strongest, most serviceable road form in the world. They decided to submit their form to a series of grueling tests to find out just how much abuse it could take.

First of all, they bolted a Heltzel form to a similar form of another make. Inserting a jack at the center point they applied pressure to compare bending moments. The Heltzel form remained rigid while the other form weakened and bent to the pressure.

Secondly, they put the two forms to an impact test. Two men wielded sledges and alternately attempted to smash the forms apart. Here again the Heltzel form withstood the punishment as the second form was damaged beyond repair.

Finally, they set up two lines of Heltzel forms and backed a loaded freight train over them without a sign of failure.

What does all this prove? Simply that when you buy Heltzel forms you're getting the best that money can buy at no increase in price. A road form must be able to withstand punishment year in and year out, with replacement held to a minimum. That's why Heltzel engineers have gone to such great lengths to design and build and to prove the Heltzel form is the finest ever made.

Let Heltzel prove it to you. It will pay handsome dividends. For additional information, or the name of the Heltzel representative nearest you, write THE HELTZEL STEEL FORM AND IRON CO., WARREN, OHIO.

**Write for Bulletin K-19 NOW!**



# Methods Memo . . .

**WE MET DAVID LYNN**, Architect of the Capitol, Washington, D. C., the other day and the fact he has been in an official capacity in Washington for 31 years makes him almost unique. According to Mr. Lynn, his office has never been bothered too much by Congressmen. Maybe the gentlemen and ladies, too, recognize the fact that Mr. Lynn's office and his control of Capitol construction is one phase of Washington they'd best leave alone.

**GOING TO WASTE** is a lot of hydro power at Niagara Falls, so far as the United States is concerned. Latest reports from Washington indicate Congress will not decide this session as to who will build the plants necessary to take advantage of the extra water made available by the Canadian-U. S. treaty signed in October, 1950. A combination of several private utilities, long operating at Niagara Falls, wants to build the project. But the New York State Power Authority and the federal government both want to get in on the deal, are blocking Congressional approval for private development.

Meanwhile, the Hydro Electric Commission of Ontario, which started construction January 1, 1951, on its side of the river, will be turning out new power by next summer, and before long will be developing the full potential of 1,200,000 hp made available by additional diversion around the falls authorized by the treaty. We will do the same some day on our side of the gorge—but when?

**SUPERSTITIOUS** about Number 13? We'll bet Bob Moses of New York City won't be any more when he learns that his \$25,000 prize-winning essay submitted in the General Motors highway contest carried only the designation of Serial No. 13 when handed to the judges for consideration.

**AN IN-SERVICE** three-year training program has been instituted by the Florida Highway Department as a means of attracting graduating engineers to state highway work and to upgrade present employees.

The big attraction, moneywise, is a starting salary of \$325 monthly, with \$400 monthly guaranteed upon completion of the course and a \$25 monthly increase after one year of satisfactory service.

In between, there will be salary increases upon passing a written examination as each of the six phases of the program is completed by the student.

However, failure to pass any two of the examinations will disqualify the trainee.

The program is divided into four months of instruction in administration, four months in field-engineering, eight in road and bridge design, six in maintenance, and six in testing materials.

Tutors for the courses will be present employees interested in the program and willing to teach the trainees.

**LOOKS LIKE** the wave of mergers engulfing the equipment manufacturing industry is now spreading to contracting. Peter Kiewit Sons' Co., of Omaha, Neb., has purchased a "substantial interest" in the Arthur A. Johnson Corp., New York City. Both firms specialize in heavy construction.

The move, according to an announcement by both firms, "will permit a closer cooperation between the companies as joint venturers, and lead to further diversification and expansion of activities of the Johnson company." Johnson officers, Arthur A. Johnson, Richard A. Johnson, Edward G. Johnson, and Chas. B. Molineaux, will retain their present positions.

**PUBLIC CONFIDENCE** in contractors has been shaken badly in Scarsdale, N. Y., where one whole corner of a four-story reinforced concrete structure under construction collapsed the other evening, killing three workmen and injuring 10 more.

The crew was working overtime to complete pouring the top floor, was within 10 min of quitting time, when tragedy struck. Men were buried, entangled and trapped by fresh concrete, broken slabs, steel reinforcing and wood shores. Give credit to town and county officials, though. These level-headed gents have engaged several widely known construction engineering consultants to investigate the ruins carefully for a cause of the collapse. Contractors on the job are veteran construction outfits, well known in the area.

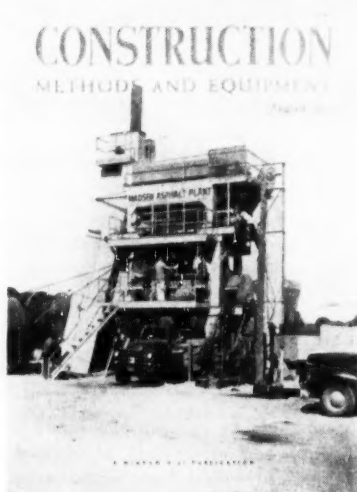
**HERE'S THE WAY** one forward-looking contracting company is assuring itself a supply of good construction engineers Merritt-Chapman & Scott Corp. invited the deans of 25 prominent engineering schools to recommend outstanding third-year students for summer employment with the firm this year. Upon their graduation, at least five of the engineers will be offered permanent jobs.

Also, MC&S will give \$1,000 for general engineering purposes to each of the

schools from which they are graduated. About 20 student engineers have been hired so far this summer, and the program will be a continuing one. It's a fine way for a progressive contractor to help both himself and engineering education at the same time.

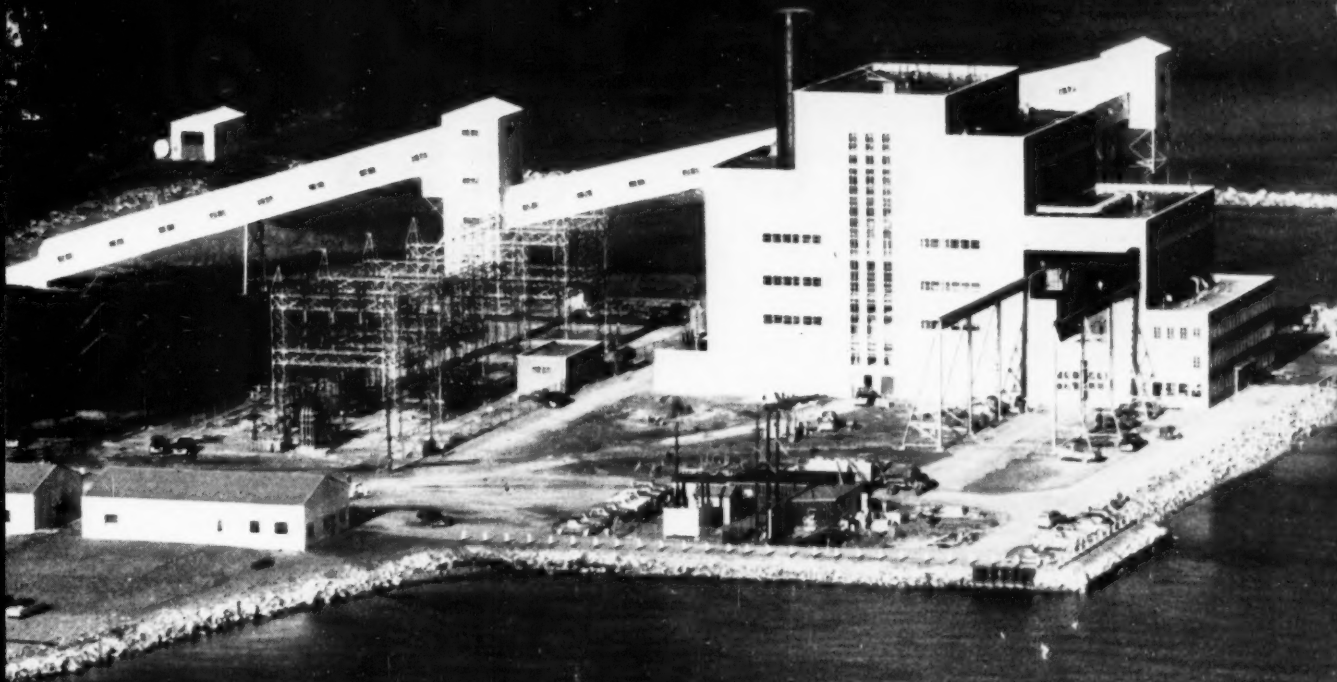
**TOO MANY PUMPS** are listed in the current supply catalog for the military services, according to a study just completed by the Engineer Research and Development Laboratories, Ft. Belvoir, Va. Forty general service centrifugal pumps, ranging in type from single-impeller to four-impeller units currently are listed.

The study shows that five pumps will suffice—four of them already being available as listed by the Contractors' Pump Bureau of the Associated General Contractors. The fifth pump, not listed by the AGC, is a single-impeller, auxiliary self-priming type with relatively high head.



## On the Cover . . .

Up in the Land of Sky Blue Waters, Megarry Brothers of St. Cloud, Minn., spot this big Madsen 4,000-lb No. 201 asphalt plant in a gravel pit on U. S. Route 10, 2 mi east of their home town. Their highway job calls for 51,940 tons of high-type bituminous paving made up of crushed granite rock, washed sand, 80-mesh sand admixture, mineral filler and AC-1 paving asphalt. Aggregates were screened into four bins in the plant. The project required three different types of mix. This plant was furnished by Madsen Iron Works, Inc., Huntington Park, Calif.



Central Hudson Gas and Electric Corp. Power Plant, Newburgh, N. Y. Engr.—Burns and Roe, Inc., New York, N. Y.; Contrs.—Drill-In Caisson Corp., New York, N. Y. and G. E. Campbell, Poughkeepsie, N. Y. Pozzolith Ready-Mixed Concrete supplied by Hudson Valley Concrete Co., Newburgh, N. Y. (Master Builders Masterplate and Embeco also used in building this plant.)

## POZZOLITH READY-MIXED CONCRETE in Central Hudson Power Plant

Use of Pozzolith Ready-Mixed Concrete in such noteworthy structures as this important power plant shows its acceptance by leading builders.

More than 10,000,000 cubic yards of Pozzolith Concrete were placed this past year alone. Pozzolith Concrete is better because it has a low unit water content.

Pozzolith\* conforms with the water-cement ratio law — basis of ACI and ASTM procedures of design, specification and production of quality concrete. *Full information on request.*

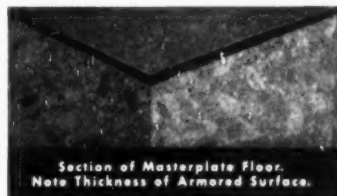
\*POZZOLITH . . . the cement-dispersing, water-reducing agent which entrains the optimum amount of air in concrete. Can be added to the mix as a powder or dissolved in water and dispensed as a liquid. Pozzolith was developed by The Master Builders Co. in 1932.

Over 600 Leading Ready-Mixed Plants  
Are Producing Pozzolith Ready-Mixed Concrete

### CEMENT DISPERSION ALSO KEY TO SUPERIORITY OF THESE MASTER BUILDERS PRODUCTS

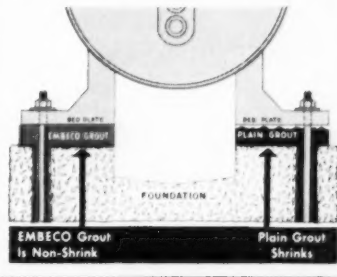
#### MASTERPLATE . . .

Masterplate produces "iron-clad" concrete floors with 4-6 times longer life; also spark-resistant and static-dissipating. Non-colored and 11 colors. For new floors and resurfacing.



#### EMBECO . . .

Embeco (1) produces flowable, non-shrink, ductile grout which . . . (2) gives full, level, lasting bedplate contact . . . (3) helps avoid costly shutdowns.



*The*

**MASTER**



**BUILDERS**

*Co*

CLEVELAND 3, OHIO

Subsidiary of American-Marietta Company

TORONTO, ONTARIO



# Less strain for crane on TIMKEN® bearings

WITH a bucket capacity of  $\frac{1}{4}$  cu. yd., this Unit 1020 Dragline is designed for jobs where power, speed, stability and long reach are vital. To help keep it on the go with minimum maintenance, it uses Timken® tapered roller bearings at vital points: 2 on the vertical idler gear, 2 on the vertical swing shaft, 8 on the conical rollers, 4 on the fairlead.

Timken bearings take radial and thrust loads in any combination. Line contact between their rollers and races gives them extra load-carrying capac-

ity. Shafts and gears stay in alignment, reducing wear. The true rolling motion and incredibly smooth finish of Timken bearings practically eliminate friction.

Because they keep housings and shafts concentric, Timken bearings make closures more effective. Dirt, dust stay out—lubricant stays in. Lubrication costs and time are reduced.

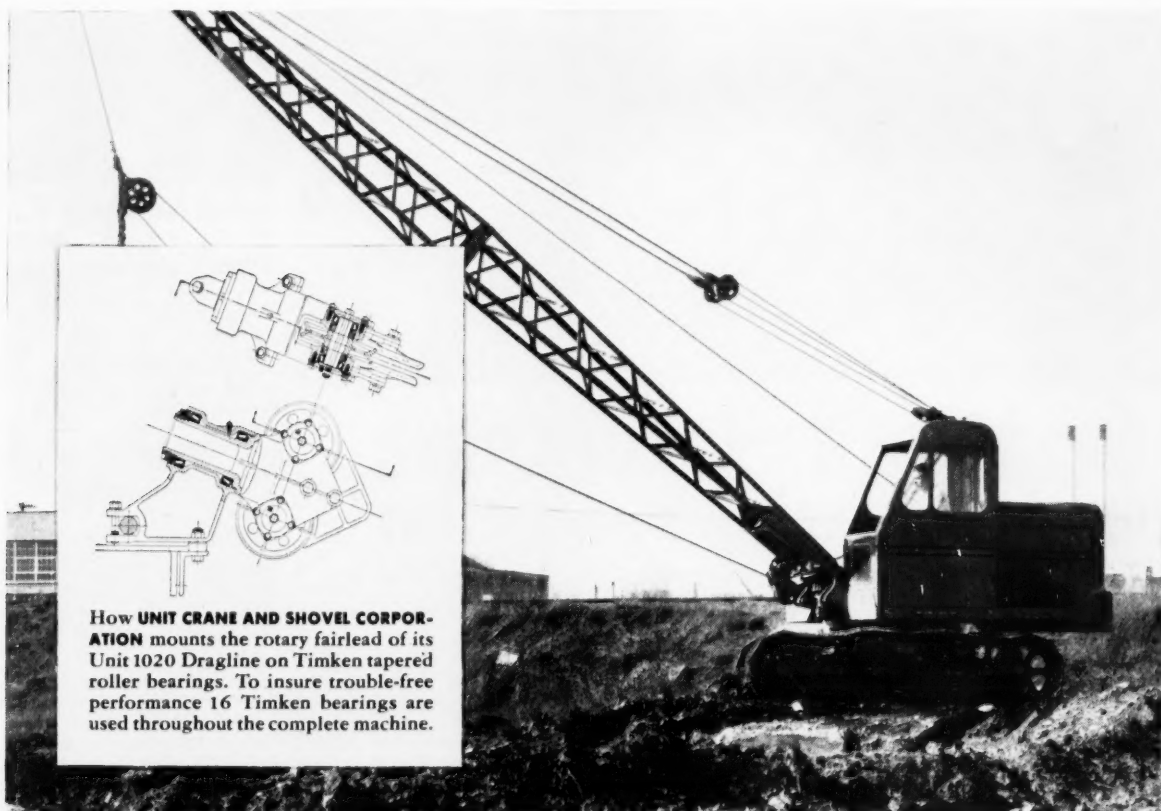
Timken bearings normally last the life of the machine. They are 1) engineered for the job, 2) made of Timken fine alloy steel, 3) precision

manufactured.

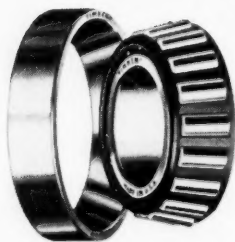
Why not profit from the more than 50 years of bearing research and development of the Timken Company? Specify Timken bearings in the machinery you build or buy. Look for the trade-mark "Timken" stamped on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".



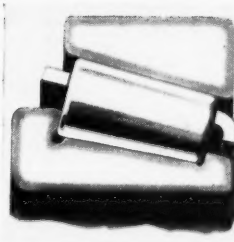
*This symbol on a product means its bearings are the best.*



How UNIT CRANE AND SHOVEL CORPORATION mounts the rotary fairlead of its Unit 1020 Dragline on Timken tapered roller bearings. To insure trouble-free performance 16 Timken bearings are used throughout the complete machine.



**TIMKEN**  
TAPERED ROLLER BEARINGS



## HARD ON THE OUTSIDE, TOUGH ON THE INSIDE

Rollers and races of Timken bearings are case-carburized to give a hard, wear-resisting surface and a tough, shock-resisting core. Result: longer bearing life.

The Timken Company leads in: 1. advanced design; 2. precision manufacture; 3. rigid quality control; 4. special analysis Timken steels.

NOT JUST A BALL NOT JUST A ROLLER THE TIMKEN TAPERED ROLLER BEARING TAKES RADIAL AND THRUST LOADS OR ANY COMBINATION